How Food-Related Values Influence Food Consumption Behavior

Thesis

presented to the Faculty of Arts
of the University of Zürich
for the degree of Doctor of Philosophy

by

Mirjam Hauser
of Böttstein / AG

Accepted in the spring semester 2013 on the
recommendation of Prof. Dr. Klaus Jonas
and PD Dr. Carmen Tanner

Zürich, 2013

Acknowledgments

I would like to thank everyone who supported and encouraged me during the last three years and hence made this dissertation possible.

I am particularly grateful to my advisor, *Prof. Dr. Klaus Jonas*, for endorsing the project idea and monitoring my progress. As a mentor, he always found time to answer critical questions, read drafts, and give prompt and detailed feedback. I sincerely appreciated his valuable guidance and encouragement in good and bad times.

I would like to express my deep gratitude to *PD Dr. Carmen Tanner* for her constructive recommendations, especially in the early stages of this project.

This research would not have been possible without the support of *Migros-Genossenschafts-Bund MGB*, *nextpractice*, and my employer, the *Gottlieb Duttweiler Institute GDI,* namely, *Karin Frick* and *David Bosshart*.

My grateful thanks are extended to *Prof. Dr. Rainer Riemann*, *Prof. Dr. Fridtjof Nussbeck*, *Prof. Dr. Peter Schmidt,* and *Prof. Dr. Eldad Davidov* for their support and for sharing their knowledge on methods and data analysis.

Special thanks go to *Dr. Esther Maier* and *Dr. Angela Häne,* who always had an open ear, read drafts in their spare time, and gave suggestions – not to mention their exemplary role. I am also very happy to have *friends* who appreciated what it meant to be doing a PhD and working at the same time.

Last but not least, I wish to thank *Roger Koller*, *my parents*, and *my brother,* who were always there for me and gave me the confidence for initiating, persevering through, and completing this dissertation.

Contents in Brief

Abstract

Consumers in countries with a broad range of food options are faced with the agony of choice. Consumers' food choice decisions are influenced by various and possibly conflicting values. The values' meaning, interplay, and impact on grocery shopping have not been investigated comprehensively. This dissertation project examined what values are salient with regard to eating, how they interrelate, how they interplay with different eating situations and food products, and how food-related values impact consumers' actual purchase behavior.

A first qualitative study based on the repertory grid technique revealed six food-related values (authenticity/naturalness, conviviality, health, quality/indulgence, convenience, and price sensitivity) that were associated to varying degrees with different eating situations and food product categories. Also, consumers' personal values differed significantly from their perception of current trends in eating culture.

The second study used questionnaire data from a roughly representative sample of 851 adults living in Switzerland. Actual food purchase was measured by a Swiss retail grocery's loyalty cards over the period of one year. Four theoretically derived structural equation models were compared across eight different food product categories to estimate the relations between food-related values and grocery shopping and also the mediating role of attitudes.

Results showed that the impact of food-related values differed depending on the particular food products. Food-related values have both indirect – via attitudes – and direct effects on food purchase behavior. Values

are thus only partially (and not fully) mediated by attitudes; this calls central assumptions of the theory of planned behavior into question. Non-deliberative processes (such as habits and impulses) are a possible explanation for the partial-mediation of values on food purchase. The findings have important practical implications: Based on the study's results food companies can better understand consumers' decisions, evaluate and, if necessary, adapt their strategic positioning and future development.

Zusammenfassung

Menschen in Ländern mit einer grossen Lebensmittelauswahl haben oft die Qual der Wahl. Bei Ess-Entscheidungen steht der Konsument in einem Spannungsfeld unterschiedlichster Werte – deren Bedeutung, Zusammenspiel und Einfluss aufs Lebensmitteleinkaufsverhalten wurde bis heute aber kaum umfassend erforscht. Dieses Dissertationsprojekt untersuchte, welche Werte beim Essen zentral sind, in welchem Verhältnis diese zueinander sowie zu bestimmten Esssituationen und Produktkategorien stehen, und wie sich diese essspezifischen Werte auf tatsächliches Einkaufverhalten auswirken.

Eine erste qualitative Studie mit Hilfe der Repertory Grid Technik wies auf sechs essspezifische Werte hin (Authentizität/Natürlichkeit, Geselligkeit, Gesundheit, Qualität/Indulgence, Convenience und Preissensibilität), die unterschiedlich stark mit verschiedenen Esssituationen und Produktkategorien assoziiert wurden. Auch zeigte sich eine Diskrepanz zwischen dem persönlichem Ess-Ideal und der wahrgenommenen heutigen Esskultur.

Die zweite Studie bediente sich eines strukturierten Fragebogens und umfasste eine annähernd repräsentative Stichprobe von 851 Schweizern. Tatsächliches Kaufverhalten wurde mittels Kundenkarte eines Schweizer Lebensmittelhändlers über ein Jahr lang gemessen. Je vier theoretische Strukturgleichungsmodelle wurden anhand acht unterschiedlicher Lebensmittel-Produktkategorien verglichen, um die Beziehungen zwischen essspezifischen Werten und Kaufverhalten, sowie die Mediatorrolle von Einstellungen abzuschätzen.

Die Resultate zeigen, dass bei verschiedenen Produktkategorien unterschiedliche Werte wirksam sind und sowohl indirekte – via Einstellung – als auch direkte Effekte auf das Kaufverhalten haben. Einstellungen sind also nur partielle (und nicht vollständige) Mediatoren von Werten, was der Theorie des geplanten Verhaltens widerspricht. Als möglicher Erklärungsansatz für die partielle Mediation werden nicht-deliberative Prozesse (wie Gewohnheiten oder Impulse) diskutiert. Für Unternehmen im Lebensmittelbereich hat diese Studie hohe Praxisrelevanz, denn auf Basis der Ergebnisse können sie Konsumentscheide besser verstehen, ihre strategische Positionierung und Entwicklung überdenken sowie gegebenenfalls anpassen.

Table of Contents

1

Introduction

While it seems that personal values have important implications for marketing practitioners and researchers, values and the ways in which they influence the behavior of consumers who look at and choose brands, product classes, and product attributes is not clear (Vinson, Scott, & Lamont, 1977, p. 44).

People's value priorities are crucially important for understanding and predicting attitudinal and behavioral decisions. Behaviors in general are influenced by three psychological constructs: ideologies, values, and attitudes, as is stated by Maio, Olson, Bernard, and Luke (2003). For decades theorists have considered values central for comprehending attitudes and behavior (e.g., Allport, Vernon, & Lindzey, 1960; Kluckhohn, 1951; Williams, 1968), and recently there has been a revival of empirical research on the relations of values to attitudes and behavior, both within and across cultures (Davidov, Schmidt, & Schwartz, 2008).

Generally, values can be defined as "desirable, trans-situational goals, varying in importance, that serve as guiding principles in people's lives" (Schwartz et al., 2001, p. 521) (see also Rokeach, 1973; Schwartz, 1992). This definition acknowledges that values are subjective: They reflect how an individual sees the world and are not meant to represent objective reality. Values refer to desirable goals that individuals endeavor to attain and are thus motivational constructs. The goals are abstract and transcend specific actions and situations. They therefore serve as general standards or criteria that guide personal selection and evaluation of actions. Finally, values are connected to one another and ordered by their relative importance. Hence, all persons have a value system that contains a finite number of universally important value types, but the relative importance that a person places on each of these value types varies (Rohan, 2000).

Although values and attitudes differ in their level of abstraction (attitudes refer to tendencies to evaluate any concrete object), these constructs

do not exist in isolation from each other. Rather, there are bidirectional causal influences (Maio et al., 2003). Although a particular specific attitude can possibly elicit changes in higher order values, researchers have focused on the influences from the higher level of abstraction (values) to the lower level of abstraction (attitudes).

The power of values lies in the observation that a small change in the values structure can lead to numerous changes in lower level attitudes toward a variety of issues. For example, experiments have shown that attitudes change more through manipulating, in this case attacking, people's respective values than by directly attacking peoples' attitudes (Blankenship, Wegener, & Murray, 2012). Knowing people's personal values can help us to understand and foresee a variety of different attitudes and behaviors.

Thus, on the societal level, values – having both predictive and explanatory power – can mirror major social change and may influence the direction of social change and its speed (e.g., Davidov et al., 2008). For instance, "if people begin to attach less importance to the value of equality, they might change their attitudes towards a variety of issues," (Maio et al., 2003, p. 284) such as their attitude towards public policies promoting equally fair human working conditions worldwide or their price tolerance with regard to fair trade products.

As the opening quotation at the beginning of this introduction states, values are also of vital interest for the economy and businesses (Vinson et al., 1977). If marketers can learn which values are important regarding their product and services, they can deduce a range of activities regarding

communication, promotions, and strategic alignments of products and services. Thus, marketers can save time, costs, and resources, because they do not need to know every single attitude towards every single product or service that they offer but rather abstract values regarding the business area in which they operate. Also, even though personal values can change, they are more stable than attitudes; therefore, knowing the relevant values aids reappraisal of the current offer and future market possibilities. For businessmen though, there remains one caveat: Generally, they do not want to know the most abstract values (such as equality, hedonism, etc.) but on a subtly more concrete level regarding their business context. For example, a grocery retailer most likely wants to know which values are important to their customers regarding food and eating, and a car manufacturer is probably more interested in values regarding mobility and ways of transport.

Personal values theories suggest that an individual's values are arranged in a hierarchical network consisting of three levels. These levels vary in their degree of cognitive abstraction and can be summarized as global values, domain-specific values, and attitudes (Rokeach, 1973; Vinson et al., 1977). Domain-specific values are more numerous and more specific than basic human values but more abstract than concrete attitudes toward certain objects and entities, and they still possess an 'ought to' quality (in the sense of a guiding principle in a person's life). Personal values related to food can be regarded as such domain-specific values.

Because food/eating is an important everyday activity and one of the oldest consumption behaviors in the history of mankind, this dissertation

project is dedicated to studying personal values regarding food, food choice, and eating and the values' impact on consumption behavior. The two guiding questions of this dissertation project are: What are people's personally relevant values regarding food choice? And how do these values influence their actual food purchase behavior?

The statement on the importance of understanding values quoted above was written by Vinson et al. in the late 1970s, and one could assume that this must have been a vibrant research area. According to Google Scholar, Vinson's study has been cited more than 400 times. But in general, still little is known about the exact process by which values coordinate people's attitudes and behavior (Rohan, 2000). This dissertation project contributes two puzzle pieces to current research knowledge on values and individual behavior. First, it will use an old but for a long time underutilized method to assess and understand Swiss people's domain-specific values. The results are of high theoretical and practical relevance at the same time. Second, based on this understanding of salient food-related values, the impact pattern of domain-specific values, attitudes, and actual food purchase will be investigated. As the precise influences of values on behavior are still unclear, I will analyze and compare different impact patterns to one another and illuminate the mediating role of attitudes in the value–attitude–behavior chain.

This dissertation is divided into four chapters. In this introductory first chapter, I lay out the basis of value–behavior research, different value theories, measurement, and expected impact patterns of values on consumer behavior.

The chapter is divided into different sections beginning with an overview of different value models, next I will dive into the role and meaning of values regarding consumption behavior in general and food purchase in particular. Another section is about measuring values and the strength and weaknesses of quantitative versus qualitative methods. This section is followed by a presentation of the current state of scientific research on the supposed value–attitude–behavior impact chain – and the predominantly suggested mediating role of attitudes in particular. Chapter 1 closes with setting out the aim of this doctoral dissertation and providing a short description of the two main studies conducted. Chapters 2 and 3 then present the two field studies in detail and provide preliminary answers to the central guiding questions (what are the salient food-related values, and how do they influence food purchase?). Although study 2 is based on the findings in study 1, the two chapters are prepared as independent articles for submission to a scientific journal and follow APA (American Psychological Association, 2010) and journal-specific requirements for submission. Consequently, some of the theoretical foundations will be mentioned repeatedly. Finally, in chapter 4 I provide a summary and general discussion of the findings, strengths, and limitations of the two studies and discuss the general implications.

Value Theories

There is a common sense in the scientific and lay world that values are central in understanding and shaping our society and individual behavior. Today there is no shortage of value theories. Instead, it is rather difficult to find definitional

consistency in values theory and research (Rohan, 2000). Furthermore, some of the value models have demonstrated methodological problems, others are low in contemporary relevance, lack reliability and validity, or have been analyzed in only one context (see Maio et al., 2003, pp. 285-286). In this overview on value theories, I will therefore start with Milton Rokeach's (1973) research on the importance and meaning of values for individual behavior, dive into one of the currently most prominent universal values theory by Shalom H. Schwartz and colleagues (Schwartz, 1992; Schwartz et al., 2012), and present a values approach with practical relevance, Jonathan Gutman's (1982) means-end chain model.

Values as Enduring Beliefs

Whereas theorists and researchers in different social disciplines agree upon the importance of values on society and individuals, in practice they make little distinction between values and attitudes. Rokeach's (1973) theory of human values explicitly regarded values as enduring beliefs that can refer to self or to others and are embedded in a cognitive network of attitudes and beliefs. Rokeach proposed a hierarchical organization in the sense that a relatively small set of values should influence a much larger set of attitudes. This implies that a priming of a value should make accessible a variety of value-relevant attitudes, and a change in the importance of the value can influence many different value-related attitudes. Rokeach (1973) also emphasized that values do not exist in isolation but rather in systems: People organize their values along a continuum from the least important to the most important (and they act

according to the value's importance). And even though Rokeach viewed values as relatively stable constructs, values can change when individuals need to make decisions favoring one value over another (Maio et al., 2003).

Values as Universal Constructs

One of the values concepts most often referred to currently is Schwartz's (1992) theory of basic human values. The theory sought to identify a comprehensive set of basic values that are recognized in all societies. Schwartz (1992) defined basic values as transsituational goals, varying in importance, that serve as guiding principles in the life of a person or group. This definition makes it clear that Schwartz's model accepts most of Rokeach's principles: It is congruent with the aspects of value stability and centrality in people's lives.

Schwartz's original theory included 10 motivationally distinct values that are supposed to comprise the major value orientations recognized across cultures. His values measurement instrument was validated cross-culturally (Schwartz, 1992) and revisited after a revival of empirical research and numerous studies on the relations of values to attitudes and behavior (Schwartz et al., 2012). The refined theory supports the central assumption of the original theory: the idea that values are arrayed on a circular motivational continuum, building a circumplex structure. Adjacent values in the circumplex model tend to be positively correlated, and opposing values tend to be negatively correlated – the more distant any two values in the circumplex are, the more antagonistic their underlying motivations. The refined theory newly implies that various ways of partitioning the circle are legitimate, from many yet more

differentiated to few but rather broad values: be it into 19, 10, 4, or 2 values (as shown through confirmatory factor analyses and multidimensional scaling analyses; Schwartz et al., 2012). Thus, depending on researchers' required precision in understanding and predicting the relations between values and other variables, they can choose the fine-tuning of their value partitioning and calibrate the value differentiation.

The important findings in Schwartz's theory are that values are universal constructs, are aligned in a circular motivational continuum, can be divided into differently high-resolution (sub-)sets, and have both explanatory and predictive power. Consequently, values do not exist in isolation but always in relation with other values. This implies that it is not enough to look at one single value alone. We must also look at its surrounding neighboring and competing opposite values.

Values as Means to Certain Ends

Although Schwartz's human value theory is widely accepted in the scientific community, it is not commonly applied in marketing and business practice. To understand the underlying values and motivation driving certain consumer behavior, market researchers have relied upon different methods, such as Gutman's (1982) means-end chain model. It is based on the assumption that consumers regard certain product or service attributes as means to accomplish certain goals (end states). Gutman's means-end chain model based on the laddering interview technique has become a commonly used framework in

commercial market research and has also been widely implemented in applied academic consumer research (Grunert, 2010).

The laddering interview technique hints at a special feature of this conceptualization of personal values: A means-end chain is a subjective link between product attributes, assumed consequences of these product attributes for the consumer, and the consumer's personal values. Through understanding these subjective links, market researchers gain insight into why consumers prefer certain products. In contrast to the Schwartz's or Rokeach's value theories, Gutman's model turns the value–attitude–behavior relations upside-down. Concrete product attributes are meant to satisfy specific needs, which in turn feed into certain life values. Thus, the laddering interview technique starts with asking questions at the most concrete level ("what foods do you eat?" – e.g., pizza), which becomes the bottom of the ladder. The interviewer then asks "why?". This prompts the respondent to think about a second, more abstract construct, such as "because it is convenient and tastes good." The "why?" question is repeated until the ladder has reached the abstract level of a personal life value (Grunert, 2010).

In conclusion, the means-end chain model supports the idea that consumer behavior is guided by underlying personal values and life goals. In contrast to other value theories, its starting point is concrete attributes of products or services. Its merit is that it can be easily (and thus has been successfully) applied to very different products or topics without requiring prior knowledge of the underlying values.

Values, Consumer Behavior, and Food Choice

> *(...) all attitudinal and behavioral decisions ultimately should be traceable to personal value priorities (...). That is, personal value priorities cause decisions* (Rohan, 2000, p. 270).

One of the central characteristics of values – and one of the main reasons politicians and companies want to understand them – is their predictive power. This is what this section deals with. Understanding people's values means understanding what consumers want, what they desire. In fact, a link between personal value priorities, attitudes, and behavior "reflects the widely held and empirically supported assumption that people's personal value priorities often guide their behavior effortlessly, with little or no conscious awareness" (Rohan, 2000, p. 270).

The pervasive role of values in all aspects of human life has caused interest in their particular role in various consumption contexts (Homer & Kahle, 1988; Kahle, 1996; Vinson et al., 1977). Kahle (1996) mentions several reasons for this. First, as noted above, values help clarify our understanding of consumers' buying motivation (attitudes can explain brand and product choices but cannot clarify why consumers evaluate products differently and thus prefer one to another). Second, value-behavior linkages or value chains (such as Gutman's means-end chains) may reveal consumers' adaptive involvement with a product, service, or choice. Consequently, third, it is possible to use

value chains for developing advertising and communication programs that link the product or service to consumers' personal meanings and values at several, increasingly meaningful levels of abstraction (Reynolds & Gutman, 1988). Fourth, the measuring of advertising and communication effectiveness can be improved by analyzing how well the communications actually cover the pursued personal values.

Summing up, there is ample evidence that uncovering consumers' values is beneficial over and above gaining a deeper understanding of consumers' wants and desires. The next passage looks at why assessing values is of particular interest in the area of eating and food choice.

Food Choice Models

If we think of food intake as a human foundation of life, a simple mechanism that merely is based on physiological needs, why do people at the same place within the same culture and with the identical market offer show such different eating behaviors?

In a review of physiological mechanisms of food choice, Rogers and Blundell (1990) concluded that social factors play a crucial role in shaping preferences for food and that food choices will often be guided by an individual's valuation of possible consequences of consuming a particular food. Eating is not only about what to eat but also almost always about when, how, where, and with whom we eat. Food choice in post-industrial countries such as Switzerland is complex and influenced by a multitude of interacting variables, such as personal factors (i.e., ideals and resources like available

income), social factors (i.e., relationships with other persons), and the context of food choice (i.e., physical surroundings and behavior settings) as described by Sobal, Bisogni, Devine, and Jastran (2006) in their conceptual model of food choice process.

The complexity of food choice behavior and the intervening variables are the reasons why there is no single commonly accepted theory of food choice. There are several different food models, and the following section will introduce some prominent, currently used food choice frameworks that are the most relevant for this research project's guiding questions.

The food choice process model. The food choice process model is an inductively developed model of food choice that was derived from in-depth qualitative interviews with adults in the United States. It investigated how people create their food choices (Connors, Bisogni, Sobal, & Devine, 2001; Sobal et al., 2006). The model assumes that physiological, cognitive, and sociocultural influences and processes are all involved together in food choices. But it emphasizes that "people actively consider, interpret and negotiate food choice possibilities and exercise their personal agency in perceiving, defining, conceptualizing, managing, presenting and enacting food choices" (Sobal et al., 2006, p. 2). It thus underlines the process of people actively constructing choices by selecting what, when, where, with whom and what to eat.

The food choice process model views current food choices as the result of events and experiences over the life course that are influenced by personal

and social factors and the context (see Figure 1). At the core of the model is the personal food system consisting of food-related values that vary in degree of complexity across individuals. These values are often in conflict, and people use strategies that were situation dependent. Connors et al. (2001) demonstrated that consumers used the following main strategies to balance the different values: "(i) categorizing foods and eating situations; (ii) prioritizing conflicting values for specific eating situations; and (iii) balancing prioritizations across personally defined time frames" (p. 192).

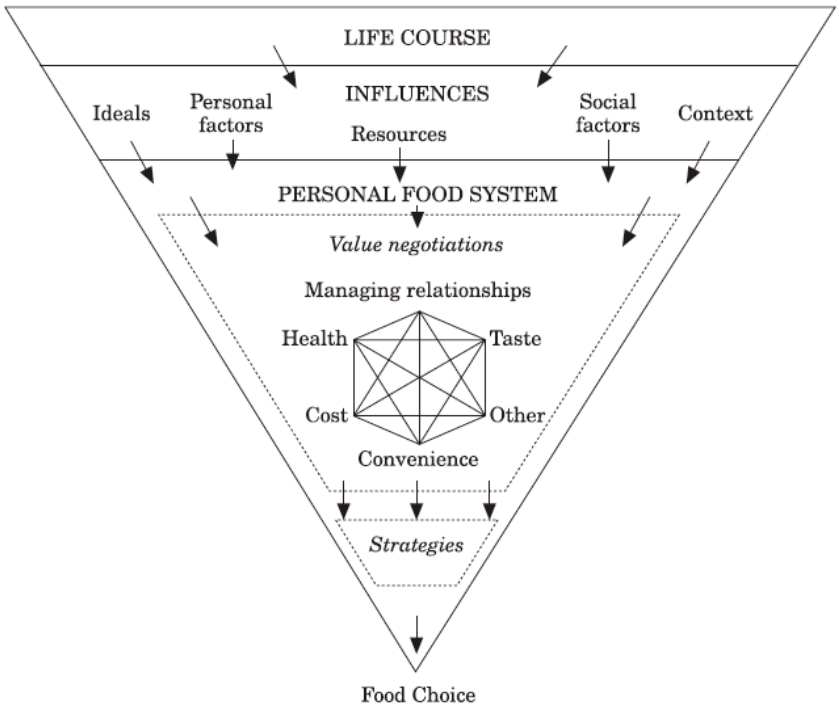


Figure 1. The food choice process model (Connors et al., 2001, p. 190).

The food choice process model points to the important role of personal food systems and value negotiations within personal food systems. But it does not directly measure food choice behaviors and their relationship with personal

values; nor does it measure what values are important in what eating or food buying situations.

Social psychological models of food choice. One way to reduce the complexity in food choice models is by looking at the social psychological core mechanisms underlying human behavior. In particular, the theory of planned behavior by Ajzen (1991) has been used successfully to explain and predict food choice intentions and related behavior (e.g., Conner, Povey, Sparks, James, & Shepherd, 2003). For example, Povey, Conner, Sparks, James, and Shepherd (2000) found that the theory of planned behavior explained 57% of the variance in intentions to eat five daily portions of fruit and vegetables and 32% of the variance in actual fruit and vegetable consumption measured one month later.

However, these findings show that, in general, the relation between attitude and actual behavior is less predictable than the relation between attitude and behavioral intent (Conner & Armitage, 2006; Shepherd, 2001). This discrepancy is probably due to the focus of the theory of planned behavior on the rational and cognitive impact on behavior; affective components of human behavior (such as sensory liking, habits, and attitude ambivalence) are meanwhile underrepresented.

The theory of planned behavior can provide valuable insights into the determinants of food choice and is thus crucial with regard to eating behavior interventions – for example, encouraging healthier or more sustainable eating behaviors. Nevertheless, it largely disregards the motivation behind cognitively

endorsed attitudes, which makes it difficult to gain an understanding of change and reluctance to change in attitudes.

Lifestyle and food behaviors. A different approach to reduce the complexity of food choice is by explaining actual food behavior through internalized values that are inherent of an individual's lifestyle (Brunsø, Grunert, & Bredahl, 1996; Brunsø, Scholderer, & Grunert, 2004; Grunert, Brunsø, Bredahl, & Bech, 2001). Lifestyle is defined as "a system of individual differences in the habitual use of declarative and procedural knowledge structures that intervene between abstract goal states (personal values) and situation-specific product perceptions and behaviors" (Brunsø et al., 2004, p. 665). In other words, personal lifestyles are supposed to be the translation of the rather abstract and global personal values into specific goals, and they are linked to behavioral routines to carry out goal-directed action.

In fact, Brunsø et al. (2004) found that food-related lifestyles are a strict mediator of the relation between the more abstract personal values and situation-specific product perception and food behaviors. That is, personal values predict food-related lifestyle, and lifestyle predicts behavior. This finding consequently also corroborates the relation between the rather abstract personal values and concrete behavior – in this case linked by personal lifestyles. Even though this framework does not directly measure food-related values (instead it measures food-related lifestyle, covering ways of cooking, shopping, and purchase motives), it provides valuable insights on the mechanism of the value-behavior chain.

Context-Dependent Food Choices

Food choice varies across different cultures, within a culture, and even within an individual, depending on the food choice context or situation. As Saba (2001) presents in an overview of cross-cultural differences in food choice, geographical differences in food consumption patterns across Europe have decreased since the 1960s. Still, fundamental differences exist between the Mediterranean, Northern, and East-Central European diets. Comparing six different Western eating cultures, Fischler and Masson (2008) found diverging eating motives and differences in the role and meaning of food in everyday life. For example, "in comparison to Americans, the French eat smaller portions, take longer meals, consider food a more important part of life, worry less about the health effects of foods, organize their social life and celebrations around it, and are less receptive to the foods of other cultures" (Rozin, 2006, p. 30).

Food preference can also vary widely within a culture, and even on the individual level, food decisions do not always need to be consistent. Attitudes and motives may contain evaluations that are ambivalent, which means the simultaneous presence of both negative and positive cognitions about an attitude object (Maio et al., 2003, p. 290). Additionally, and as is described in the food choice process model, consumers often are torn between competing values such as price versus quality, or taste cravings versus health aspects. Hence, "food choice processes are complex, evolving, dynamic and situational" (Connors et al., 2001, p. 190).

Research on food choice should therefore take culture and situation into account. To generate a more holistic understanding of food choice within a

culture it is important to include a variety of different everyday eating and food choice situations to reveal more generally held food choice patterns.

Value–Attitude–Behavior Models

Having seen that values matter with regard to food choice, we will now look at the assumed relationships between food-related values, specific attitudes, and actual consumption behavior. This section is dedicated to the second guiding question of this research: In what way do values actually influence food purchase behavior?

Most of the psychological theories suggest that there are reciprocal influences between (food-related) values, attitudes, and behavior; but little is known about the exact process by which values coordinate people's attitudes and behavior (Rohan, 2000). Even though most theories suppose that values influence attitudes, and attitudes in turn influence behavior, the exclusively mediating role of attitudes is not completely clarified. For example, the food choice process model (Connors et al., 2001) presented above places food-related values at the center of the theory but does not explicitly consider the role of attitudes. As it is not specified more in detail, we could expect food-related values to influence eating behavior directly.

Theory of Planned Behavior Assumes Full Mediation of Values

In contrast to the food choice process model, other theories expect attitudes to play the key role in understanding and predicting behavior. Specifically, the theory of planned behavior (Ajzen, 1991) is one of the models that has been

effectively applied to anticipate food purchase intentions and behavior (Conner & Armitage, 2006). In the theory of planned behavior, behavior depends on intention, which in turn is influenced by attitude towards behavior, subjective norm, and perceived behavioral control (see Figure 2). Attitudes, subjective norm, and perceived behavioral control are formed through their respective beliefs. All possible background factors (such as values, personality, culture, knowledge, etc.) are believed to influence these beliefs.

Ajzen (2005) states that these background factors "influence intentions and behavior indirectly by their effects on the behavioral, normative, or control beliefs and, through these beliefs, their effects on attitudes, subjective norms, or perceptions of control" (p. 135).

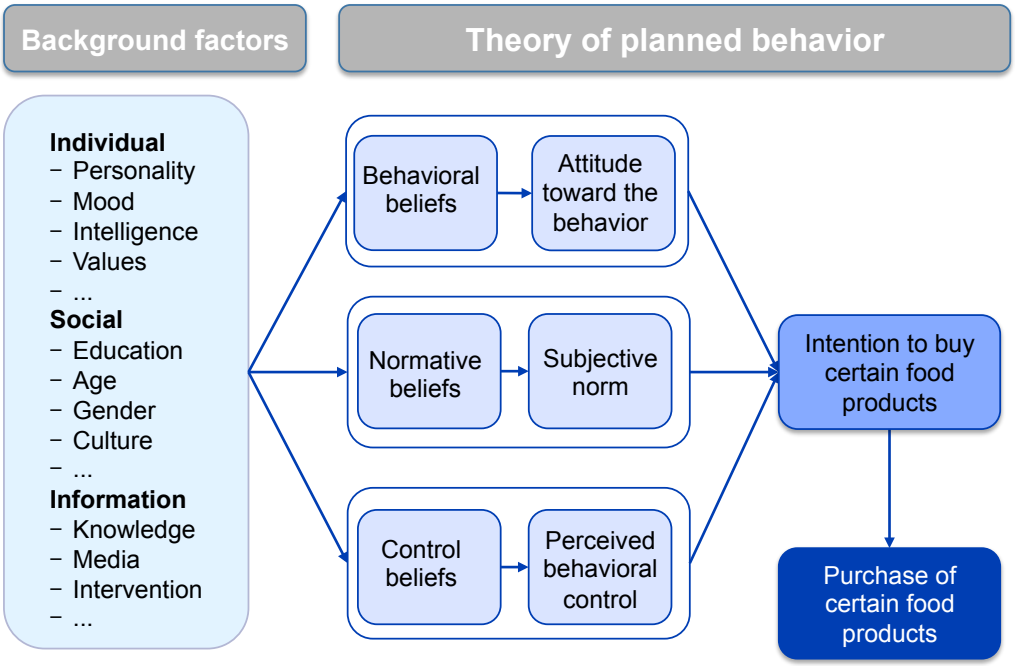


Figure 2. The theory of planned behavior (Ajzen, 1991) with background factors (my own adaptation).

Background factors such as values are believed to shape and be inherent to behavioral, normative, and control beliefs but do not have additional explanatory power. Hence, the theory of planned behavior proposes that attitudes fully mediate the relationship between values and behavior.

Buying Food as a Low-Involvement Activity

In contrast to the significance placed on reasoning in the theory of planned behavior, other approaches emphasize that eating behavior is highly habitual and quite often eludes rational thinking (e.g., Tanner, 2006). Probably because it is an everyday activity, people most often establish eating routines, with repetition in food consumption as well as eating context. Jastran, Bisogni, Sobal, Blake, and Devine (2009) showed that eating routines are embedded in daily schedules of work, family, and recreation: "(…) regular eating practices enhance the quality of life and health for individuals and families by providing predictability and stability" (p. 134).

In fact, according the reflective-impulsive model of consumer behavior developed by Strack, Werth, and Deutsch (2006), most consumption situations include both reflective and impulsive components that contribute jointly to a given behavior. The reflective system consists of rule-based reasoning that generates explicit, propositional decisions. Meanwhile, the impulsive system works comparatively effortlessly, because information is processed automatically without relying on cognitive resources. This system is functional in the sense that it saves mental effort and time while executing the impulsive

behavior. Common examples of impulsive behaviors are impulse buying and habitual consumption.

General habits can derive from values that have become central and are part of a person's self-concept (Verplanken & Holland, 2002). This is explained through the premise that central values are enacted repeatedly in a variety of situations, which is a prerequisite of building a habit; habits develop only through sufficient and satisfactory repetition in stable contexts (Verplanken & Aarts, 1999). If values can manifest themselves in habits, then it is plausible to hypothesize that values can also have direct effects on eating behavior and at the same time also have indirect effects, mediated by attitudes.

In conclusion, according to the different theories about the value–attitude–behavior chain there are at least three competing but theoretically plausible impact patterns of values on food purchase behavior (see Figures 3a to c).

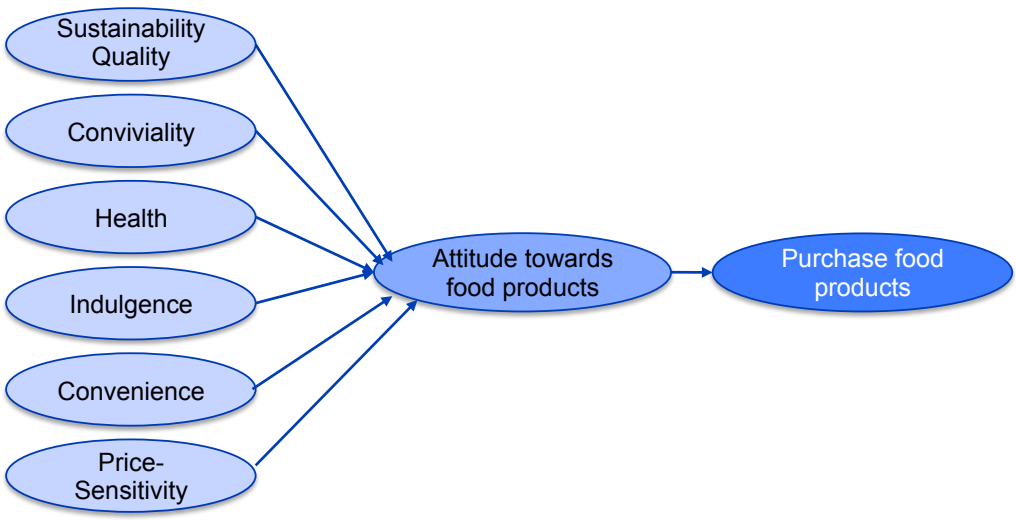


Figure 3a. Full mediation model (according to the theory of planned behavior).

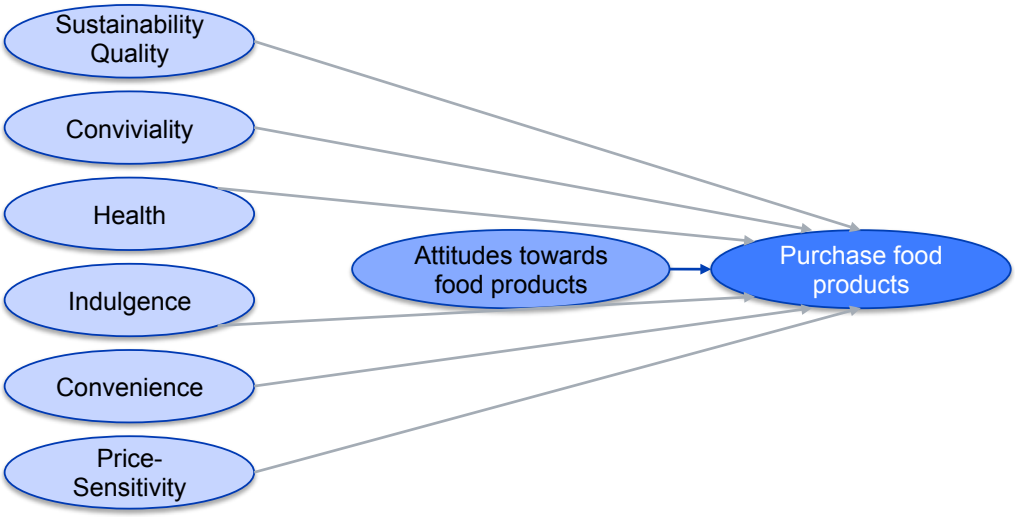


Figure 3b. Only direct-effects model (no mediation of values through attitude).

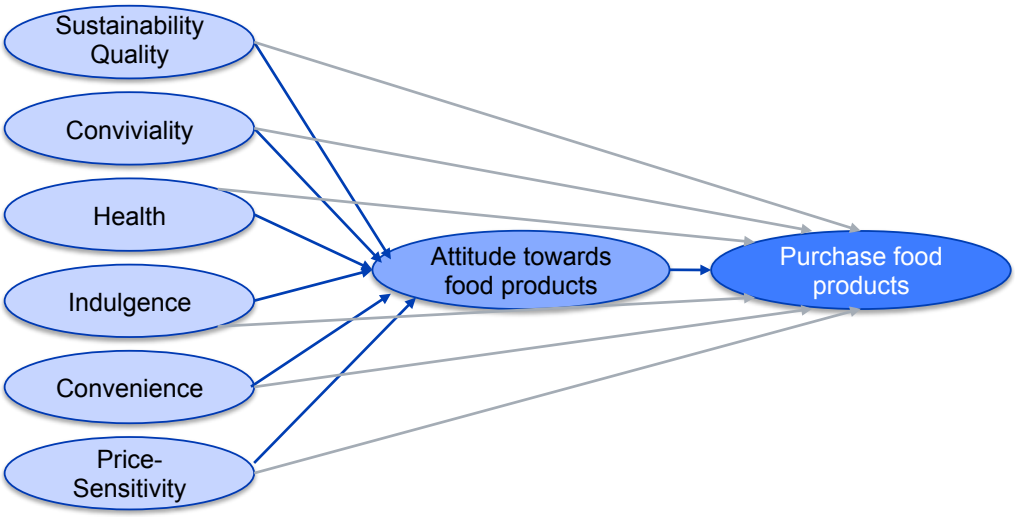


Figure 3c. Partial-mediation model (both direct and indirect effects of values on behavior).

Measuring Food-Related Values

There probably exist as many measurement procedures as there are value theories. With regard to food choice we can distinguish two major approaches (e.g., Sobal et al., 2006). First, existing models, frameworks, and theories (such as the theory of basic individual values, the theory of planned behavior, or the means-end approach) have been applied to analyze food behavior and used their respective measurement models (such as the List of Values, the Schwartz Value Survey, etc.). Most of the measurements included quantitative but some also qualitative instruments. Second, new models to explain food choice have been developed inductively using almost exclusively qualitative research methods (e.g., the food choice process model). These models assume that people actively construct their food choices based on cognitions and social negotiations (Sobal et al., 2006).

This dissertation project is a combination of both approaches, and I will briefly discuss the advantages and limits of qualitative and quantitative methods in the context of food choices.

Quantitative Approaches

Global values theories, such as Schwartz's (1992; Schwartz et al., 2012) basic individual values theory and Rokeach's (1973) value theory, have been adopted to explain food choices. Both theories have been linked to specific food choice behavior. For example, in a review Aertsens, Verbeke, Mondelaers, and Van Huylenbroeck (2009) concluded that certain of Schwartz's (1992) global values were positively correlated with consumers'

choice of organic foods. These values can be measured with the 56- or 57-item Schwartz Value Survey (SVS) (Schwartz, 1992, 2006) and the 40-item Portrait Value Survey (PVS) (e.g., Schwartz, 2006). An example for the SVS is rating the sample item "EQUALITY (equal opportunity for all)" as "a guiding principle in my life" on a 9-point scale labeled 7 (of supreme importance), 6 (very important), 5, 4 (unlabeled), 3 (important), 2, 1 (unlabeled), 0 (not important), -1 (opposed to my values). The PVS works comparably, except that the description of values is in the third person, and people then rate how much the person in the description is like themselves (e.g., "He strongly believes that he should care for nature" – "How much like you is this person?").

Rokeach's (1973) original value measurement has been refined as the List of Values (LOV) by Kahle and colleagues (e.g., Kahle, 1983; Kahle & Kennedy, 1989) and likewise implemented successfully to understand food-buying behavior (e.g., Homer & Kahle, 1988). The LOV inventory is a list of nine values that are rated on a 9- or 10-point scale in terms of their importance and influence on the person's daily life. The values are: self-fulfillment, excitement, sense of accomplishment, self-respect, sense of belonging, being well-respected, security, fun and enjoyment, warm relationships.

The measurement of these rather abstractly described values points at the possibility that there is quite a gap between global values and food-related values. Indeed, other researchers have tried to develop new scales that are still on a general level but closer to food and eating situations. The food-related lifestyle (Brunsø et al., 2004) is a survey instrument that measures 23 lifestyle dimensions in five different domains (e.g., ways of shopping, cooking

methods, purchasing motives, etc.). Though the food-related lifestyle measure is conceptualized broadly and realistically, it mixes food-related context, attitudes and values, which makes it unsuitable for answering the guiding research questions of this dissertation project. A similar but not directly related instrument is the food choice questionnaire by Steptoe, Pollard, and Wardle (1995), which assesses nine distinct food choice motives, i.e., health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity, and ethical concern. Lindeman and Väänänen (2000) acknowledged this measure as convenient but not exhaustive, and they provided a new sub-scale that includes ethical food choice motives. Though the food choice questionnaire has been applied in different countries and contexts, its current sufficiency with regard to cultural peculiarities may be questioned.

In summary, the quantitative measurement scales are either too far away from the present research questions or measure food-related values only partly, which is one reason to turn our interest to qualitatively developed food choice theories.

Qualitative Approaches

Besides the circumstance that there is no adequate value measure instrument already available that is culturally sensitive, there are other reasons to rely on qualitative approaches. As elaborated earlier, context proves to be highly relevant to food choice decisions. Food choice "is a constructed activity where past experiences and contexts in the life course provide a basis for evaluating

current influences (…)" (Sobal et al., 2006, p. 14), and it is therefore constantly reevaluated and if necessary adapted.

This view is comparable to Kelly's (1955) personal construct psychology, a theory that views individuals as not having immediate access to 'objective' reality. Rather, individuals possess a picture, an interpretation of objective reality, and actively construct 'their' subjective reality. Kelly sees every person as a scientist who actively explores and experiments with his environment. That is, "a person attributes meaning to things and events by placing them in relation to other things and events, by putting them in a context with other phenomena. (…) Seen biographically, every person thus develops a unique individual construct system" (Fromm, 2004, p. 12/13).

Kelly originally developed a specific method to gain access to subjective realities that is now called the repertory grid technique. The grid technique can be viewed as a structured interview technique, where individuals compare and describe their associations with different, pre-established food elements (e.g., eating situations, food trends, food products, etc.).[1] People describe these food elements in their own words, but the discrimination task provides structured data that facilitate analysis and interpretation (Dick, 2000; Fromm, 2004; Scheer & Catina, 1993).[2] It is therefore also possible to compare different personal realities and even aggregate them into a collective reality. This makes it possible to understand common patterns and underlying values with regard to food choice (Riemann, 1991).

[1] See Appendix A-2 for a list of all elements.
[2] See Appendix A-1 for a user's interface of an example discrimination task.

This inductive research approach allows investigation of personal meanings and subjective values in everyday food choice decisions. It also takes into account the many diverse contexts of food choice and food experiences. Thus, this procedure is most probably suitable for answering the first guiding question of this dissertation project by understanding what is personally important to people when they make food choices: it reveals internalized food-related values and their patterns of interaction.

Analyzing Different Impact Patterns

Knowing which values matter and how they relate to certain eating situations and food products is an essential but not sufficient task regarding this dissertation project's goal. Ultimately, researchers and businesses alike want to understand how these food-related values impact actual behavior. For example, do people who honor the value of sustainable food production actually buy more organic products? And, if so, could this not solely be predicted by a more positive attitude toward organic products? Or, in more technical words: Do attitudes toward certain food products fully mediate the effect of values on behavior?

To answer this question, it is necessary to compare different theoretically derived impact patterns against one another. To test the hierarchical organization of the food-related value–attitudes–behavior chain and the mediating role of attitudes across eight different food product categories I will use structural equation modeling (SEM). As explained by

Byrne (2010), SEM is a statistical methodology that relies on a confirmatory, hypothesis-testing approach:

> *The hypothesized model can then be tested statistically in a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data. If goodness-of-fit is adequate, the model argues for the plausibility of postulated relations among variables; if it is inadequate, the tenability of such relations is rejected (p. 3).*

According to Byrne (2010) some of the main characteristics that set SEM apart from other multivariate procedures are:

- it takes a confirmatory rather than an exploratory approach to the data analysis (the pattern of intervariable relations is specified a priori),
- it provides explicit estimates of error variances in parameters, and
- it can incorporate both unobserved (latent, e.g., food-related values) and observed variables (i.e., actual food purchase behavior).

As the first, qualitative part of this dissertation will provide an understanding of personally relevant food-related values and what they mean to consumers, a confirmatory approach seems the most appropriate. If we have some knowledge about the underlying variable structure, we can postulate relations between the observed measures and the underlying factors a priori and then test this hypothesized structure statistically (confirmatory factor analysis, CFA).

One of the main advantages of SEM is that alternative, competing models that are grounded in different theories can be compared based on their fit to the sample data (e.g., the models presented in Figure 3a-c). Another possibility with SEM is model generating, which refers to the case where an a priori postulated model fits the data poorly and thus is rejected, but this misfit is subsequently analyzed in an exploratory way in order to modify and re-estimate the model (Jöreskog, 1993). The focus in model generating is to locate the source of misfit and to determine a model that better describes the data. Ultimately, the goal is "to find a model that is both substantively meaningful and statistically well fitting" (Byrne, 2010, p. 8).

In sum, SEM is a method to transform substantive theory into testable models and to test alternative theories against each other. In this project this allows for measuring the food-related values with latent variables; testing the measurement model with confirmatory factor analysis; estimating and comparing the global fit of different structural equation models against one another; and, in the case that the partial-mediation models fit the data well, additionally checking for complete or partial mediation.

Aim of This Dissertation Project and Outline of the Two Studies

The purpose of this project is to examine salient food-related values for Swiss consumers, the influence of their values on their actual consumption behavior in different food product categories, and the mediating role of attitudes. The aim is to answer the following questions:

- What are Swiss consumers' personally relevant attitudes and values regarding food choice, how are they organized, and what is their meaning?
- In what way do these values influence actual food purchase behavior, and what is the role of attitudes?

There is a general consensus that food-related values matter with regard to food choice and therefore need to be examined in-depth to improve our understanding of food choice. There is also agreement that food-related values are culturally dependent and have to be researched in context (Connors et al., 2001). To analyze what values influence behavior, we first need to know what the personally important values are. Various studies have indicated that Swiss eating and food choice culture is different from other European eating cultures (Fischler & Masson, 2008; Lüdi & Hauser, 2010), but up to now no comprehensive list of values that are salient to Swiss consumers is available.

Knowing what values are central in certain contexts is not enough. It remains to be studied what, and how, food-related values influence actual food

purchase. Most theories suggest that there are reciprocal influences between values, attitudes, and behavior – but little is known about the exact process by which values coordinate people's lives (Rohan, 2000). There are several competing theories about the functioning of the value–attitude–behavior chain, particularly in the food area, where habitual and automatic behavior seems to play an important role (e.g., Jastran et al., 2009). It can be assumed that food-related values impact behavior directly and/or indirectly via attitudes. Various studies have proven the one or the other mechanism (e.g., Aertsens et al., 2009; Homer & Kahle, 1988), but to my knowledge there has not been any model connecting domain-specific values, attitudes, and behavior and testing the alternative impact patterns.

The aim of this project is twofold. First, study 1 will employ a qualitative-inductive approach to find out what is personally important to people when they make food choices and to uncover internalized food-related values, their meaning, and their relation patterns. It will replicate previous findings in the sense that food-related values are central to food choice decisions, but as it uses a different methodological technique, it will extend the existing knowledge to encompass a more holistic view.

Second, based upon the salient food-related values identified, study 2, a questionnaire study, will examine real food purchase behavior. This will allow the testing of competing models of the relations within the value–attitude–behavior chain and, further, scrutinize the mediating role of attitudes. Up to now, the impact of values has been analyzed mostly with regard to organic or fair trade products. This project goes a step further and examines the role of

values within a broad selection of eight quite different food product categories, ranging from organic to ready-to-eat foods. Building upon previous findings, several theoretically derived hypotheses will be tested over the course of this project (the first three will be dealt with in study 1 and the rest of the hypotheses in study 2):

- Food choice is influenced by multiple positive and negative food-related values simultaneously.
- The salience of food-related values varies across everyday food situations and product categories.
- The perceived food culture of today conflicts with some of the personal food-related values.

- Food-related values influence attitudes towards different food product categories.
- Attitudes towards different food product categories influence actual purchase behavior in these food product categories.
- Food-related values influence food purchase behavior only indirectly, fully mediated by attitudes.
- Food-related values have explanatory power beyond attitudes with respect to food purchase behavior.
- Food-related values have variable influences on attitudes and food purchase behavior contingent upon food product categories (resulting in different impact patterns depending on the food product category).

To test these hypotheses, I planned the following two studies.

Study 1: Salient Food Attitudes and Values

Study 1 was designed to answer the first guiding question of this dissertation project, namely, to examine salient food-related attitudes and values of Swiss consumers. To discover personal meanings and patterns of everyday food choices across different situations, I used a qualitative-inductive approach, based on Kelly's (1955) personal construct psychology, in the form of repertory grid interviews. The repertory grid technique allows for a flexible and sensitive approach to the individual's personal world but also provides structured data that facilitate analysis and interpretation (e.g., Riemann, 1991).

The analysis and interpretation of the constructs generated in this manner was expected to disclose elaborated values systems (see Figure 4 for an example of the hypothesized relations between all the generated constructs). The constructs were then summarized into coherent positively and negatively evaluated food-related values. Previous findings (Connors et al., 2001; Jastran et al., 2009; Sobal et al., 2006) pointed to the assumption that food choice decisions are a result of categorizing, prioritizing, and balancing conflicting values. We thus expected to be able to demonstrate what values are correlated with what eating situations and food products. In fact, we anticipated that different food product categories and different social eating situations would be correlated with variable – and sometimes conflicting – food-related values. As such, the perceived current eating culture was supposed to be associated with positively and negatively evaluated food-related values.

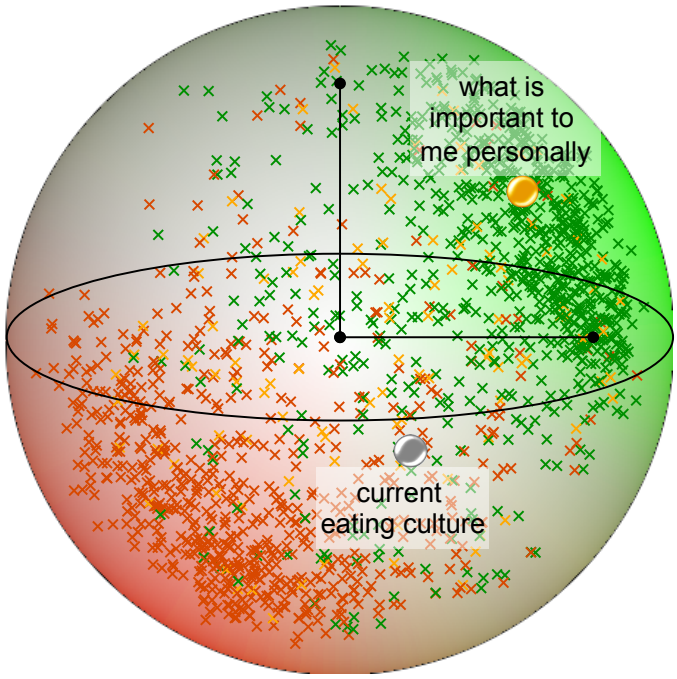


Figure 4. Hypothesized three-dimensional model containing the sum of all generated constructs (depicted as crosses, 'X') based on the total sample of 100 Swiss consumers, and positioning of the two elements 'what is important to me personally' (yellow ball) and 'current eating culture' (grey ball). Green crosses indicate positively valued constructs, red crosses negatively valued constructs, and orange crosses ambivalently valued constructs. The closer the crosses and elements are to one another in the three-dimensional space, the more similar they are in their meaning.

Study 2: Impact of Food-Related Values and Attitudes on Consumption

Study 2 was conceptualized to answer the second guiding question of this dissertation project; specifically, to find out what values, and in what way, influence actual food purchase of different food products. For this reason, a questionnaire survey was designed based on the findings of study 1 and

conducted with a large, roughly representative sample of Swiss consumers. This data was complemented with actual food purchase behavior measured by a loyalty card of a major Swiss grocery retailer over the period of one year.

To prove the hierarchical organization of the value–attitude–behavior chain, study 2 used structural equation modeling. Food-related values were hypothesized to influence attitudes, and these, in turn, to influence food purchase behavior (Homer & Kahle, 1988). Contrary to previous findings, food-related values were expected to be only partially mediated by attitudes. This was examined by comparing four different structural equation models (no mediation, full mediation, partial mediation – see Figures 3a-c – and partial mediation adjusted to food product categories – see Figure 5) across the range of eight very different food product categories.

In other words, some food-related values were supposed to have direct effects on behavior, omitting the more cognitively and consciously represented attitudes (Strack et al., 2006). This, in turn, would imply questioning central assumptions of the theory of planned behavior (Ajzen, 1991) and substantiating the additional explanatory power of food-related values with regard to understanding food purchase behavior.

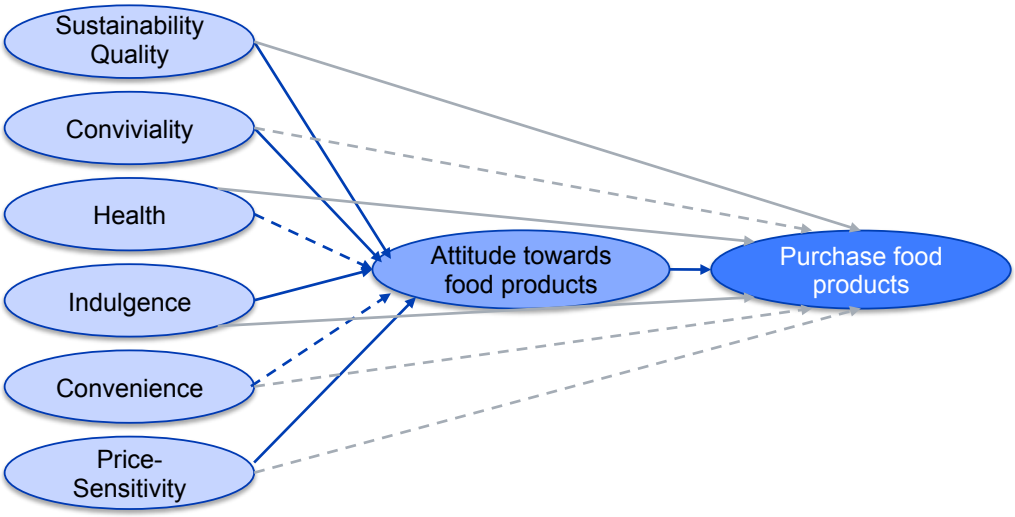


Figure 5. Hypothesized, exemplary model of the impact pattern of food-related values on food purchase behavior and the mediating role of attitudes. – Note. Dashed lines indicate expected, exemplary non-significant relationships.

I designed this dissertation project to contribute to a better understanding of the antecedents of food choice decisions and the underlying mechanism of the value–attitude–behavior chain. The results should specify what the salient food-related values are and how they interrelate to different eating situations and food products and point to the existence of currently conflicting food-related values. Additionally, the results should reveal the significance of values predicting the purchase of different foodstuffs and advance our understanding of how much, and in what way, food-related values influence actual behavior. On top of that, the results would provide implications for practitioners and theoreticians alike, with suggestions for theoretical advancements and future product developments as well as marketing and communications campaigns.

References

Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: A review. *British Food Journal, 11*(10), 1140-1167. doi:10.1108/00070700910992961

Ajzen, J. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211. doi:10.1016/0749-5978(91)90020-T

Allport, G. W., Vernon, P. E., & Lindzey, G. (1960). *Study of values: Manual and test booklet.* Boston, MA: Houghton Mifflin.

American Psychological Association. (2010). *Publication manual* (6th ed.). Washington, DC: American Psychological Association.

Blankenship, K. L., Wegener, D. T., & Murray, R. A. (2012). Circumventing resistance: Using values to indirectly change attitudes. *Journal of Personality and Social Psychology, 103(4),* 606-622. doi:10.1037/a0029226.

Brunsø, K., Grunert, K. G., & Bredahl L. (1996). An analysis of national and crossnational consumer segments using the food-related lifestyle instrument in Denmark, France, Germany and the United Kingdom, *MAPP Working Paper No. 36*. Aarhus, Denmark: The Aarhus School of Business.

Brunsø, K., Scholderer, J., & Grunert, K.G. (2004). Closing the gap between values and behavior: A means-end theory of lifestyle. *Journal of Business Research, 57*(6), 665-670.

doi:10.1016/S0148-2963(02)00310-7

Byrne, B. M. (2010). *Structural equation modeling with AMOS* (2nd ed.). New York, NY: Routledge.

Conner, M., & Armitage, C.J. (2006). Social psychological models of food choice. In R. Shepherd & M. Maats (Eds.), *The psychology of food choice* (pp. 41-57). Oxfordshire, United Kingdom: CABI.

Conner, M., Povey, R., Sparks, P., James, R., & Shepherd, R. (2003). Moderating role of attitudinal ambivalence within the theory of planned behaviour. *British Journal of Social Psychology, 42*(1), 75-94. doi:10.1348/014466603763276135

Connors, M. M., Bisogni, C. A., Sobal, J., & Devine, C. (2001). Managing values in personal food systems. *Appetite, 36*(3), 189-200. doi:10.1006/appe.2001.0400

Davidov, E., Schmidt, P., & Schwartz, S. H. (2008). Bringing values back in: The adequacy of the European social survey to measure values in 20 countries. *Public Opinion Quarterly, 72*(3), 420-445. doi:10.1093/poq/nfn035

Dick, M. (2000). The application of narrative grid interviews in psychological mobility research. *Forum: Qualitative Social Research, 1(2).* Retrieved from: http://www.qualitative-research.net/index.php/fqs/article/view/1075/2339

Fischler, C., & Masson, E. (2008). *Manger: Francais, Européens et Americains face a l'alimentation* [Eating: French, European, and American opinions towards food]. Paris, France: Editions Odile Jacob.

Fromm, M. (2004). *Introduction to the repertory grid interview.* Münster, Germany: Waxmann.

Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing, 46*(2), 60-72.

Grunert, K. G., Brunsø, K., Bredahl, L., & Bech, A.C. (2001). Food-related lifestyle: A segmentation approach to European food consumers. In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society. A European perspective of consumers' food choices* (pp. 211-229). Berlin-Heidelberg, Germany: Springer.

Grunert, K. G. (2010). Means-end chains: A means to which end? *Marketing*, 6(1), 30-38.

Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology, 54*(4), 638-646. doi:10.1037/0022-3514.54.4.638

Jastran, M. M., Bisogni, C. A., Sobal, J., Blake, C., & Devine, C. M. (2009). Eating routines: Embedded, value based, modifiable, and reflective. *Appetite, 52*(1), 127-136. doi:10.1016/j.appet.2008.09.003

Jöreskog, K. G. (1993). Testing structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (p. 294-316). Newbury Park, CA: Sage.

Kahle, L. R. (Ed.) (1983). *Social values and social change: Adaptation to life in America.* New York, NY: Praeger.

Kahle, L. R. (1996). Social values and consumer behavior: Research from the list of values. In C. Seligman, J. M. Oslon, & M. P. Zanna (Eds.), *The*

psychology of values: The Ontario Symposium Vol. 8 (pp. 135-152). Mahwah, NJ: Lawrence Erlbaum.

Kahle, L. R., & Kennedy, P. (1989). Using the List of Values (LOV) to understand consumers. *Journal of Consumer Marketing, 6*(3), 5-12. doi:10.1108/EUM0000000002549

Kelly, G. A. (1955). *The psychology of personal constructs, Vols. 1 and 2*. New York, NY: Norton.

Kluckhohn, C. (1951). Values and value-orientations in the theory of action: An exploration in definition and classification. In T. Parsons & E. Shils (Eds.), *Toward a general theory of action* (pp. 388-433). Cambridge, MA: Harvard University Press.

Lindenman, M., & Väänänen, M. (2000). Measurement of ethical food choice motives. *Appetite, 43*(2). 55-59. doi:10.1006/appe.1999.0293

Maio, G. R., Olson, J. M., Bernard, M. M., & Luke, M. A. (2003). Ideologies, values, attitudes, and behavior. In J. Delamater (Ed.), *Handbook of social psychology* (pp. 283-308). New York, NY: Kluwer Academic/Plenum Publishers.

Povey, R., Conner, M., Sparks, P., James, R. & Shepherd, R. (2000). Application of the theory of planned behaviour to two dietary behaviours: roles of perceived control and self-efficacy. *British Journal of Health Psychology*, *5(2)*, 121-139. doi:10.1348/135910700168810

Reynolds, T. J., & Gutman, J. (1988). Laddering theory, method, analysis, and interpretation. *Journal of Advertising Research*, *28*, 11-31.

Riemann, R. (1991). Repertory Grid Technik: Handanweisung [Repertory grid technique: Manual]. Göttingen, Germany: Hogrefe.

Rogers, P. J., & Blundell, J. E. (1990). Psychobiological bases of food choices. *The British Nutrition Foundation Nutrition Bulletin,* 15, 31-40.

Rohan, M. J. (2000). A rose by any name? The value construct. *Personality and Social Psychology Review, 4*(3), 255-277. doi:10.1207/S15327957PSPR0403_4

Rokeach, M. (1973). *The nature of human values.* New York, NY: Free Press.

Rozin, P. (2006). The integration of biological, social, cultural and psychological influences on food choice. In R. Shepherd & M. Maats (Eds.), *The psychology of food choice* (pp. 19-40). Oxfordshire, United Kingdom: CABI.

Saba, A. (2001). Cross-cultural differences in food choice. . In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society: A European perspective of consumers' food choices* (pp. 233-246). Berlin/Heidelberg, Germany: Springer.

Scheer, J. W., & Catina, A. (1993). Einführung in die Repertory Grid-Technik [Introduction to the repertory grid technique]. Bern, Switzerland: Hans Huber.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology, Vol. 25* (pp. 1-65). New York, NY: Academic Press. doi:10.1016/S0065-2601(08)60281-6

Schwartz, S. H. (2006). Les valeurs de base de la personne: Théorie, mesures et applications [Basic human values: Theory, measurement, and applications]. *Revue Française de Sociologie, 47,* 249-288.

Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., … Konty, M. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology*. doi:10.1037/a0029393

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the cross-cultural validity of theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology*, *32*(5), 519-542.

Shepherd, R. (2001). Does taste determine consumption? Understanding the psychology of food choice. In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society. A European perspective of consumers' food choices* (pp. 117-130). Berlin/Heidelberg, Germany: Springer.

Sobal, J., Bisogni, C. A., Devine, C. M. & Jastran, M. (2006). A conceptual model of the food choice process over the life course. In R. Shepherd & M. Maats (Eds.), *The psychology of food choice* (pp. 1-18). Oxfordshire, United Kingdom: CABI.

Steptoe, A., Pollard, T., & Wardle, J. (1995). Development of a measure of the motives underlying the selection of food: The food choice questionnaire. *Appetite, 25*, 267-284. doi:10.1006/appe.1995.0061

Strack, F., Werth, L., & Deutsch, R. (2006). Reflective and impulsive determinants of consumer behavior. *Journal of Consumer Psychology, 16*(3), 205-216. doi:10.1207/s15327663jcp1603_2

Tanner, C. (2006). Wenn Konsumenten und Konsumentinnen Konsumprodukte nach ihrer Umweltfreundlichkeit beurteilen [When consumers evaluate consumption products with respect to their environmental friendliness]. *Gaia, 15,* 215-220.

Williams, R. M. Jr. (1968). Values. In E. Sills (Ed.), *International encyclopedia of the social sciences*. New York, NY: Macmillan.

Verplanken, B., & Aarts, H. (1999). Habit, attitude, and planned behaviour: Is habit an empty construct or an interesting case of automaticity? *European Review of Social Psychology, 10,* 101-134.

Verplanken, B., & Holland, R. (2002). Motivated decision-making: Effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology*, *82*, 434-447.

Vinson, D. E., Scott, J. E., & Lamont, L. M. (1977). The role of personal values in marketing and consumer behavior. *Journal of Marketing, 41*(2), 44-50.

2

Measuring salient food attitudes and food-related values. An elaborated, conflicting and interdependent system

Mirjam Hauser[a], Klaus Jonas[a], Rainer Riemann[b]

[a] Department of Psychology, University of Zurich, Zurich, Switzerland

[b] Department of Psychology, Bielefeld University, Bielefeld, Germany

Published in: *Appetite* 57 (2011) 329-338

doi:10.1016/j.appet.2011.05.322

Corresponding author: Mirjam Hauser, c/o Klaus Jonas, Department of Psychology, University of Zurich, Binzmühlestrasse 14/13, 8050 Zurich, Switzerland. E-mail: mirjam.hauser@uzh.ch

Acknowledgments

This research was supported by Migros-Genossenschafts-Bund (MGB), Zurich, Switzerland; GDI Gottlieb Duttweiler Institute, Zurich, Switzerland; and nextpractice, Bremen, Germany.

Abstract

Consumer food choice behaviour in post-industrial countries is complex and influenced by a multitude of interacting variables. This study looked at the antecedents of behaviour and examined salient food-related values and attitudes. To discover personal meanings and patterns of everyday food choices across different situations we used a qualitative approach in the form of repertory grid interviews. An analysis of the personal constructs elicited from a representative sample of 100 Swiss consumers revealed elaborated value systems.

The food-related values can be summarised as: authenticity/naturalness, conviviality, health, quality/indulgence, convenience, and price. The salience of these values and their negatively evaluated counterparts differed for various social eating situations and product categories. Consumers' personal values also differed significantly from their perception of current trends in eating culture. In every-day food choices interdependent food-related values compete and are thus a possible cause of ambivalence and conflicts.

The findings offer explanations of discrepancies between values/attitudes and behaviour that may be due to situational constraints and habits. Implications for companies include the need for strategic realignment to regain consumers' trust by providing comprehensive value-congruent food solutions that also consider health and ethical criteria.

Keywords*:* Values; Attitudes; Repertory grid technique; Personal constructs; Food choice; Eating

Introduction

Consumer food choice behaviour in post-industrial countries such as Switzerland is complex and influenced by a multitude of interacting variables, such as personal factors (i.e. ideals and resources), social factors and the context of food choice. To understand food choice behaviour, psychologists have looked at the antecedents of behaviour. Attitudes and values towards consuming a product have been found to predict and explain consumers' choices across services and products, including food products (for a general overview, see Maio, Olson, Bernard, & Luke, 2003; for food-related attitudes and behaviour, see Aertsens, Verbeke, Mondelaers, & Van Huylenbroeck, 2009; Conner, Povey, Sparks, James, & Shepherd, 2003).

As Maio et al. (2003) pointed out, attitudes and values share several conceptual features. They are evaluative and subjective and exist at both conscious and nonconscious levels. Furthermore, attitudes and values are not isolated from each other, as there are reciprocal causal influences between these constructs. For example, people's values shape their attitudes, and similarly, people's attitudes influence their values.

Values and attitudes differ in levels of abstraction and in terms of their organisation. Attitudes are tendencies to evaluate any concrete object or specific entity positively or negatively. Values, in contrast, are abstract ideals that function as important, transsituational guiding principles in life (Maio et al., 2003; Rohan, 2000). The way in which values and attitudes are measured also reflects this difference. Whereas the variation of an attitude is rated on an evaluative dimension (favourable – unfavourable), the characteristic aspect of a

value is its variation in importance (Maio & Olson, 1994; Rokeach, 1973; Verplanken & Holland, 2002).

Although people differ in terms of their value priorities, the structure of the human value system is universal (Schwartz, 1992), which is why values are called global values. That is, all persons have a value system that contains a finite number of universally important value types, but the relative importance that a person places on each of these value types differs (Rohan, 2000).

Feather (1999) also argued that some value types may be relatively undifferentiated with only a few related associations, whereas other types have a high degree of differentiation with a complex network of associations. Several theories suggest that values are organised in a cognitive belief hierarchy consisting of global values (as described above), domain-specific values and attitudes (Rokeach, 1973; Vinson, Scott, & Lamont, 1977). In this study, we focus on domain-specific values – namely, food-related values.

There is a whole list of possible values and attitudes that are assumed to influence food choice: quality, price, hedonism (e.g. taste), health and family time, to name only a few. Food choice and food patterns vary across different cultures. Geographical variations in food consumption patterns across Europe have decreased since the 1960s, and there is a growing shared concern over diet and health, food safety and the environment. But there still remain considerable differences between regional diets (Saba, 2001). For example, Fischler and Masson (2008) compared six different Western eating cultures and found differences not only in motives for the foods eaten but also in the role

and meaning of food in everyday life (for a general discussion on cultural influences on food choice, see also Rozin, 2006).

Food preference also varies widely within a culture. Even on the individual level of food choice, food-related decisions do not always have to be consistent. Many attitudes and motives contain an evaluation that is ambivalent, which means the simultaneous presence of both negative and positive cognitions about an attitude object (Maio et al., 2003, p. 290). In addition, when consumers choose what to eat, they are torn between competing values such as price versus quality, or taste cravings versus health aspects (Connors, Bisogni, Sobal, & Devine, 2001; Shepherd, 1999).

The sheer number of food-related values und attitudes, the complexity of food choice behaviour and the intervening variables are the reasons why there is no commonly accepted theory of food choice. There are several different food models, but in spite of the research that has been conducted, there is no common understanding of the defining components and the processes that guide consumer food choice (for an overview on different conceptual food choice models, see Marreiros & Ness, 2009). Furthermore, only few of the models have been empirically tested and validated.

There have been attempts to reduce the complexity in consumer food choice models by looking at the core mechanisms underlying human behaviour. In particular, the theory of planned behaviour by Ajzen (1991) with and without extensions – such as self-identity (Sparks & Shepherd, 1992) and moral obligation (Sparks, Shepherd, & Frewer, 1995) – has been used successfully to explain and predict food choice intentions and related

behaviour. However, the relation between attitude and actual behaviour is less predictable than the relation between attitude and behavioural intent (Conner & Armitage, 2006; Shepherd, 2001). Because the focus of the theory of planned behaviour is on the rational and cognitive impact on behaviour, affective components of human behaviour (such as sensory liking, habits and attitude ambivalence) are underrepresented.

Another approach to reduce the complexity of the food choice models is by explaining actual food behaviour through internalized values (Brunsø, Grunert, & Bredahl, 1996; Brunsø, Scholderer, & Grunert, 2004; Grunert, Brunsø, Bredahl, & Bech, 2001). Brunsø et al. (2004) found that internalized food-specific values (called food-related lifestyles) intervene between the more abstract personal values and situation-specific product perception and food behaviours. Values that are central to the self-concept might manifest themselves as general habits, which express an overall motivation that is enacted in a variety of situations (Verplanken & Holland, 2002). Shopping for groceries has mostly been regarded as a low involvement activity and thus as more habitual or automated (for an overview, see Aertsens et al., 2009).

So far, different approaches have been utilized to gain insight into internalized food values that influence food choice. The food-choice process model by Connors et al. (2001) provides the conceptual framework for our research. Current food choices are viewed as the result of events and experiences over the life course – namely, through the influences of personal ideals, individual factors, available resources, social relationships and food context. At the core of the model is the personal food system consisting of

food-related values. According to Connors et al., everyday food choices are the result of an individualised set of values and personal strategies to negotiate these food-specific values, and so these values underlying personal food choices need to be examined in-depth to improve our understanding of food choice behaviour. This study replicates previous findings with a different methodological approach, extending this knowledge to a more holistic view of the antecedents of people's food choice and thus providing a deeper understanding by revealing patterns of food choice. It therefore lays a basis for further exploring the relationships between food-related values, attitudes and behaviour.

The goal of this study is to understand what is personally important to people when they make food choices – that is, to reveal internalized food-related values and their patterns. To discover the personal meanings and unique systems that people use in their everyday food choices across different situations, this investigation used a qualitative approach. We assume that first, food choice is influenced by multiple positive and negative food-related values simultaneously; second, the perceived food culture of today conflicts with some personal values; and third, the salience of food-related values varies across everyday food situations and product categories.

Methods

This study used an inductive research approach to investigate personal meanings and subjective values in everyday food choices. By employing a qualitative method we took into account the many diverse contexts of food choice and food experiences. Compatible with the psychological attitude concept (e.g. Ajzen, 1991; Riemann, 1983), Kelly's (1955) personal construct psychology and repertory grid technique provided the theoretical background and methodology for collecting and analysing the data. Personal construction refers to an individual's process of attributing "meaning to things and events by placing them in relation to other things and events, by putting them in a context with other phenomena" (Fromm, 2004, p. 12). In Kelly's view, personal constructs group events together according to similarity and provide meaningful distinctions according to dissimilarity, thus enabling persons to find their way in the world.

The repertory grid technique – which Kelly originally developed and called the grid form of the "Role Construct Repertory Test" – is a method designed to explore the personal, subjective worlds in which people live. This methodological approach is not a psychometric test in the sense of measuring specific traits or attitudes, but is rather viewed as a structured interview technique (Fromm, 2004). Personal constructs are elicited via distinguishing things and events (elements) by similarity or dissimilarity (discrimination task), and these individual distinctions are then recorded in a data matrix (grid) (Scheer, 1993).

The grid technique allows for a flexible and sensitive approach to the individual's personal world, but with the discrimination task it also provides structured data that facilitate analysis and interpretation (Dick, 2000; Fromm, 2004; Scheer & Catina, 1993). Results are representations of the individual's subjective reality and therefore idiographic (Catina & Schmitt, 1993). However, through mathematically analysing the relation of elements and constructs in an individual matrix, it is possible to achieve between-subjects comparisons. If a sufficient number of elements are kept constant during the interviews, then the constructs from different individuals can be put in a direct quantitative relation (Kruse, Dittler, & Schomburg, 2007).

Unlike psychometric testing, it is not very common to apply traditional quality criteria of measurement – validity, reliability, and objectivity – to structured interviews (Fromm, 2004).[1] Riemann (1991) summarizes evidence showing that the similarity structure of elements (e.g. their principal components) shows substantial temporal stability and is independent of the specific methods used. In addition, this structure is in good agreement with the structure derived via alternative methods (e.g. similarity scaling). In a review on quality criteria for the grid technique, Lohaus (1993) concludes that there are no deficiencies in terms of reliability and validity; the grid technique is of equal value to traditional investigation methods.

To collect and analyse repertory grids we used nextexpertizer® (Kruse et al., 2007). A first precursor of this computer-supported tool was Raeithel's openly accessible "Gridstack" (Raeithel, 1990; Willutzki & Raeithel, 1993). Kruse et al. (2007) refined the software based on Kruse's and Raeithel's

common research. The tool allows people to receive feedback on the results immediately after eliciting the personal constructs, therefore assuring consensual validity (Lohaus, 1993).

We conducted a first study in Germany and Switzerland, the results of which are reported in Lüdi and Hauser (2010). The present study is based on the results of 100 interviews that were carried out in Switzerland (in the German-speaking and French-speaking regions) one year later. The present sample and the one investigated by Lüdi and Hauser (2010) are not directly comparable due to differences in the demographic structure and the focus of analysis.

Participants

We interviewed 100 consumers representative of the Swiss population in gender, age, education and socioeconomic status; see Table 1 for characteristics of study participants. In November 2009, consumers were recruited by telephone and invited to the interview at offices in the cities of Zurich, Lucerne, and Lausanne. After the interview, participants were informed about the objectives of the study, thanked, and given a small monetary reward for their participation.

Table 1

Characteristics of study participants

		N			*N*
Sex	Men	54	Occupation	Full-time job	37
	Women	46		Part-time job	31
Household size	1 person	17		Homemaker	6
	2 persons	45		Retired	10
	3 persons	18		Student	9
	4 or more persons	20		In training	2
Age (in years)	18-29	20		Unemployed	5
	30-39	23	Net household income (in Swiss francs)	Below 4,000	20
	40-49	23		4,000-5,999	16
	50-59	16		6,000-7,999	18
	60-69	18		8,000-9,999	22
				10,000 or more	24

Procedure

In order to elicit personal constructs related to food, a group of food researchers conducted individual brainstorming sessions about food concepts and elements of experience with food. We then compiled all eating situations, food trends, and food product categories mentioned and eliminated redundant statements. These elements form the associative framework for the interview (Scheer, 1993).

A total of 86 elements included: personal ideal (what is important to me personally), evaluation criteria (healthy diet, ideal way of enjoying meals, etc.),

situations (eating alone, eating with my family, etc.), consumption patterns (current eating culture, eating culture in the 1990s, etc.), product groups (organic products, low-budget products, functional food, etc.), shopping locations (supermarket, discounter, farmer's market, etc.), and specific brands (Migros, Coop, Aldi, etc.).[2] Out of the last two groups (shopping locations and brands) containing 33 elements, only 18 were selected randomly per person and were used only in the third phase of allocating elements to constructs (see explanation below).

The face-to-face interviews were combined with the computer-supported tool and lasted between 90 and 120 minutes. The repertory grid interview technique can be divided roughly into two phases. In the construct generation phase, the participants' task was, first, to rate a pair of two randomly assigned elements as similar or different (e.g. the interviewed person was asked if 'what is personally important to me' and 'eating at work' were rather similar or rather different) and then to name how the elements were similar or different.

The participants were asked to describe the similarity/difference of the elements in their own words in their own language (German or French). For difference, the question was: "What characterises 'what is important to me personally' in contrast to 'eating at work'?". One respondent's answer was, for example: "homelike, relaxed eating" vs. "hectic, quick eating". For elements judged similar, the question was: "What do 'what is personally important to me' and 'eating at work' have in common?" and subsequently, "What characterises the opposite of that?". The subjective description ("homelike,

relaxed eating" vs. "hectic, quick eating") constituted the two poles of the first elicited personal construct.

The interviewer recorded the poles of the construct immediately via the computer-assisted tool. In the second phase all elements were allocated to the construct poles. The participant assigned all the remaining elements to these personal construct poles. Answer options included: the two personal construct poles (coded +1, -1), 'both of them', 'none of them', and 'no answer' (coded 0) and constituted a bipolar scale of +1, 0, -1. During the third phase participants also assigned an ideal to the personal constructs. This ideal was assessed via the element 'what is important to me personally' and thus reveals which of the personal constructs are evaluated positively (Riemann, 1983).

The procedure of eliciting personal constructions – namely, generating constructs and assigning elements to the revealed personal construct poles – was repeated until the participant had provided all the subjectively relevant constructs. There usually comes a point when the person does not provide any new constructs but rather repeats already-mentioned constructs. When an increase in the repetition of constructs was noted, the interviewer freely ended the elicitation period (Fromm, 2004). Participants in this study generated on average 7.7 personal constructs. Personal constructs poles and assigned elements were recorded immediately in a data matrix (grid) via the computer-assisted tool.

Analysis

We computed a principal components analysis (PCA) of the matrix of elements by constructs aligned over all subjects. Slater's (1977) INGRID algorithm was used, which allows a graphical representation of both elements and constructs in a single space. Unlike the use of PCA in social or personality psychology, the analysis of repertory grids does not require transformation of the original data that might distort the meaning of the construction (see Riemann, 1991). Our analyses are based on untransformed raw data. The matrix of similarities (equivalent to the correlation matrix in factor analysis) among elements is a matrix of cross-products. The eigenstructure of this matrix is used for the representation of elements and constructs.

The interpretation of repertory grid tests does not focus on labelling and interpretation of the principal axis but rather on identification of clusters of constructs with similar meaning and the interplay of constructs and elements. For practical and descriptive reasons, which are the necessary basis for this study's qualitative analysis, we limited the PCA to three dimensions, because these can be inspected in 3D plots. Three factors explain 40.7% of the elements' variance in a PCA of all elements and constructs, a value that compares quite well, for example, to factor analyses at the item level. However, it is important to reiterate that our analysis is not limited to an interpretation of axes but focuses on a description of the pattern of constructs and their use for giving meaning to "food".

For the interpretation of our results it is important to see what constitutes the basis for the spatial representation in Figures 1-3. The

important information is provided by the angles among constructs, among elements and between constructs and elements. Two constructs are represented in a narrow angle if the elements of the grid are rated highly similar on these two constructs. If all constructs were applied to two elements in exactly the same way – that is, if both elements were evaluated identically on each elicited construct – the two elements would be projected onto the same coordinates (opening up an angle of 0 degrees). At the other extreme – if all constructs were applied differently in each case – the two elements in question would be located in completely opposite positions within the coordinate system (opening up an angle of 180 degrees). If two elements are rated similarly across all constructs, they will be represented in a small angle. The spatial neighbourhood between elements and constructs indicates that an element received high ratings on the constructs represented in the same direction (e.g. in Figure 1 "what is important to me personally" is rated high on "conviviality"). The closer that two elements or constructs lie to each other, the more similar they are in their significance and meaning. Thus, graphical representations of constructs and elements allow a mathematically sound interpretation that is at the same time intuitive and simple. The exceptional feature of this PCA consists of the projection of objects (elements) and attributes (constructs) on one three-dimensional coordinate system.

The results of the "individual meaning space" (i.e. the individual matrix) can be aggregated into a "global meaning space" (i.e. the collective matrix). In the latter, all constructs elicited and applied to the elements across all 100 repertory grid interviews are considered in the data matrix.

We carried out a qualitative content analysis of the elicited personal construct poles with the help of a vector-analytical clustering process. In the clustering process, constructs with angles less than 30 degrees, which indicates a close statistical correlation, were summarised and then allocated by hand to the final clusters: the food topics (F. Schomburg, personal communication, December 11, 2009). Out of 1,544 personal construct poles 1,390 could be summarised into coherent food topics. The software nextexpertizer makes it possible to view all the elicited personal constructs and the elements' positions in an original three-dimensional mode and in this way provides easily comprehensible graphical representations of the underlying structure.

Results

The personal construct poles regarding food choice and food experience were summarised into 64 topics representing common aspects of the current food world. Table 2 shows the food-related topics, the absolute and relative number of personal construct poles per food-related topic, the absolute number of interviewed people referring to the individual food-related topics and the relative amount of food-related topics associated with the element 'current eating culture'. Further, the food-related topics are summarised with the same vector-analytical procedure (as described above) in food-related values. There are four food-related values that bear on what people look for when buying, preparing or eating food; these are not always mutually exclusive and have rather blurred boundaries. The four values constitute people's ideal of what is important to them personally; the following paragraph provides examples (for more details, see Table 2).

'Authenticity/naturalness' refers to sustainable, organic farming; traditional farming methods; setting aside time for preparing and cooking food; and use of raw, fresh ingredients. 'Conviviality' relates to communal eating; taking time to savour meals; eating as relaxation; and untreated, natural food. 'Health' covers topics such as eating healthily; calorie-conscious diet; balanced intake of nutrients; but also variety in the sense of eclectic, varied cooking. 'Quality/indulgence' comprises safe, reliable quality products; eating familiar, traditional dishes; rewarding oneself with food; and aesthetically appealing product presentation. Next follows a value that is ambivalent in its evaluation, because it includes positive and negative associated food-related topics –

depending on consumers' points of view: 'Convenience' is about goods available at any time and easy preparation.

The counterparts of these looked-for values are six food-related values that are opposed to what people desire when eating, buying or preparing food. 'Profit-oriented production' refers to dubious manufacturing methods; treatment with chemical additives; environmentally harmful transport; and use of chemical fertilisers and pesticides. 'Alienation' relates to eating on the run; feeling tense and stressed; sterile, pre-packaged, ready-to-eat products; and putting little time and effort into preparation. 'Without much thought' covers topics such as eating without thinking; traditional, hearty, plain food; one-sided, unbalanced diet; and greasy, indigestible food. 'Not paying attention to health' relates to being uninformed about nutritional matters; unvaried, monotonous diet; and lack of information about products. 'Functional satisfaction of needs' comprises the aspect of food as just a means of satisfying hunger; and being indifferent to food. And last, 'complicated, limited offer' is about the availability of only basic foods; and time-consuming and complicated preparation of food.

There is one more ambivalent food-related value concerning price. People have many positive and negative price associations with food and eating (N = 34 and N = 31, respectively); this value is not concentrated in the spatial distribution but dispersed throughout the whole three-dimensional space. For this reason, price is not shown in the following spatial figures, because it cannot be located as one coherent topic.

Table 2

Food-related topics summarised in food-related values

Food-related values	Food-related topics	Construct poles		People	Current eating culture*
		N	in %	*N*	
Authenticity/ Naturalness	traditional, down-to-earth small farmers	17	1.2%	17	38.2%
	prepared with love and attention	16	1.2%	16	21.9%
	sustainable, organic farming	10	0.7%	7	0.0%
	setting aside a lot of time for cooking	37	2.7%	33	20.3%
	natural, authentic taste	16	1.2%	16	15.6%
	cooking as a source of pleasure & creativity	20	1.4%	20	50.0%
	using raw, fresh ingredients	27	1.9%	23	42.6%
	products from known sources	19	1.4%	18	57.9%
Conviviality	communal eating	20	1.4%	18	18.4%
	food that really energises you	9	0.7%	9	33.3%
	confidence in product quality	20	1.4%	19	20.0%
	taking time to really savour meals	39	2.8%	34	28.2%
	locally produced food	22	1.6%	19	38.6%
	untreated, natural food	42	3.0%	36	58.3%
	eating what one likes guilt-free	15	1.1%	14	16.7%
	eating as relaxation	20	1.4%	19	57.5%
Health	eclectic, varied cooking	22	1.6%	18	**84.1%**
	eating healthily	61	4.4%	43	69.7%
	balanced intake of nutrients	33	2.4%	33	**74.2%**
	calorie-conscious diet	36	2.6%	28	62.5%
	exotic, special options	14	1.0%	13	**82.1%**
	light, easily digestible food	27	1.9%	23	**88.9%**
Quality/ Indulgence	aesthetically appealing presentation	10	0.7%	10	**80.0%**
	rewarding yourself occasionally	21	1.5%	20	**85.7%**
	eating together regularly	14	1.0%	14	64.3%
	eating familiar, traditional dishes	33	2.4%	30	57.6%
	getting enough energy for the day	23	1.7%	18	**78.3%**
	a broad range of products	14	1.0%	13	**85.7%**
	safe, reliable quality products	26	1.9%	22	**90.4%**
	produced without chemical additives	19	1.4%	16	**76.3%**
Convenience	goods available all year round	10	0.7%	9	60.0%
	easy and practical to prepare	39	2.8%	31	**94.9%**

Table 2 continued:

Food-related values	Food-related topics	Construct poles		People	Current eating culture*
		N	in %	*N*	
Profit-oriented production	risk of long-term damage to health	13	0.9%	10	**88.5%**
	profit-oriented production	14	1.0%	14	**71.4%**
	chemical fertilisers and pesticides	15	1.1%	14	**96.7%**
	environmentally harmful transport	18	1.3%	18	63.9%
	dubious manufacturing methods	16	1.2%	14	**75.0%**
	treated with chemical additives	30	2.2%	26	65.0%
Alienation	eating on the run	56	4.0%	42	**94.6%**
	processed, mediocre taste	10	0.7%	10	**80.0%**
	eating alone too often out of necessity	18	1.3%	15	64.7%
	sterile, pre-packaged, ready-to-eat products	29	2.1%	23	**89.7%**
	artificial-tasting food	10	0.7%	10	**95.0%**
	monotonous, inferior, unhealthy	13	0.9%	13	57.7%
	sceptical about ingredients	22	1.6%	21	**72.7%**
	putting little time & effort into preparation	21	1.5%	20	62.5%
	tense and stressed	16	1.2%	16	65.6%
Without much thought	eating without thinking	44	3.2%	34	50.0%
	traditional, hearty, plain food	28	2.0%	26	33.9%
	overexploitation of natural resources	12	0.9%	12	37.5%
	one-sided, unbalanced diet	24	1.7%	22	39.6%
	greasy, indigestible food	26	1.9%	22	32.7%
	devouring excessive amounts	16	1.2%	14	50.0%
Not paying attention to health	eating at irregular hours	10	0.7%	9	**85.0%**
	uninformed about nutritional matters	19	1.4%	16	34.2%
	unvaried, monotonous diet	19	1.4%	16	57.9%
	lack of information about the products	14	1.0%	13	57.1%
Functional satisfaction of needs	unappetising sight of overcooked food	13	0.9%	9	34.6%
	just a means of satisfying hunger	13	0.9%	12	42.3%
	totally indifferent to food	8	0.6%	8	25.0%
Complicated, limited offer	only basic foods readily available	13	0.9%	13	7.7%
	time-consuming and complicated	11	0.8%	11	31.8%
Price/Cost	price constructs positively evaluated	34	2.5%	31	51.5%
	price constructs neutrally evaluated	3	0.2%	2	33.3%
	price constructs negatively evaluated	31	2.2%	31	69.4%
	Total	1390	100%	100	

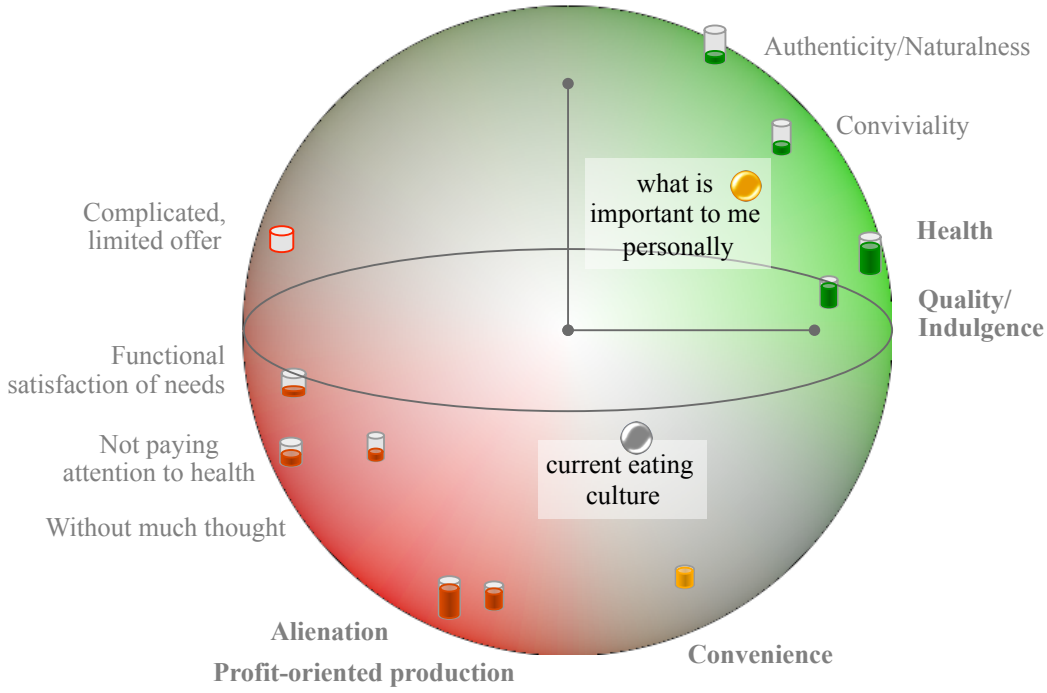
Note. "Construct poles" refer to the number (*N*) or relative amount (in %) of personal construct poles mentioned per food-related topic. "People" refers to the number (*N*) of people interviewed who mentioned personal construct poles with regard to the food-related topic.

[a] Relative amount of personal construct poles per food-related topic that consumers associate with 'current eating culture'. Food topics that are associated with at least 70% of their personal construct poles can be regarded as a significant attribute of the 'current eating culture' and are printed in bold.

Figure 1 shows food-related values (graphically depicted as cylinders with their respective name tags) and reveals the positioning of the two elements 'what is important to me personally' and 'current eating culture' in a three-dimensional coordinate system. This global meaning space is divided into two hemispheres with a transition zone: green cylinders stand for positively valued constructs, red cylinders for negatively valued constructs and orange cylinders for ambivalently valued constructs.

The closer the cylinders (the food-related values, respectively) and elements are to one another, the more similar they are in their semantic meaning. As can be seen, the element 'what is important to me personally' is situated in the centre of the positively evaluated food-related values. In fact, the four looked-for food-related values described in detail above – namely, authenticity/naturalness, conviviality, health, and quality/indulgence – are deduced from the reference element 'what is important to me personally.'

Figure 1. Food-related values (green, red and orange cylinders with name tags) and positioning of the two elements 'what is important to me personally' (yellow circle) and 'current eating culture' (grey circle) in a three-dimensional space.



Note. Green cylinders indicate positively valued constructs, red cylinders negatively valued constructs and orange cylinders ambivalently valued constructs. The closer the cylinders and elements are to one another in the three-dimensional space, the more similar they are in their meaning. The extent of the colour in the cylinders shows the degree to which the consumers associate the 'current eating culture' with the respective food-related value. The height of the cylinders reflects the number of constructs associated with the respective food-related value. The width of the cylinders reflects the depth

in the spatial position: the thinner the cylinder, the deeper its position in the three-dimensional space. Food-related values associated with the 'current eating culture' by at least 70% of consumers are printed in bold.

But the large distance between the elements 'what is important to me personally' and 'current eating culture' indicates that consumers encounter this positivity only partially in the eating culture of today. 'Current eating culture' is positioned in the transition zone from the positive to the negative hemisphere. On the positive side, 'current eating culture' is situated close to the food-related values of health, quality/indulgence and convenience. The cut-off criterion is applied at 70%, meaning that if at least 70% of the original personal construct poles clustered into one food-related value (e.g. health) are rated as similar to a certain element (e.g. the current food culture), the food-related value can be regarded as a significant attribute of this element. Table 2 (last column on the right) shows in detail the relative amount of personal construct poles per food-related topic associated with the current eating culture.

The health value in current eating culture is associated with eclectic, varied cooking; a balanced intake of nutrients; exotic, special options; and light, easily digestible food. The quality/indulgence value is reflected in the consumers' association of it with aesthetically appealing product presentation; rewarding oneself occasionally; getting enough energy for the day; a broad range of products; safe, reliable quality products; and produced without

chemical additives. Further, the current eating culture is perceived as convenient, because it is associated with easy and practical food preparation.

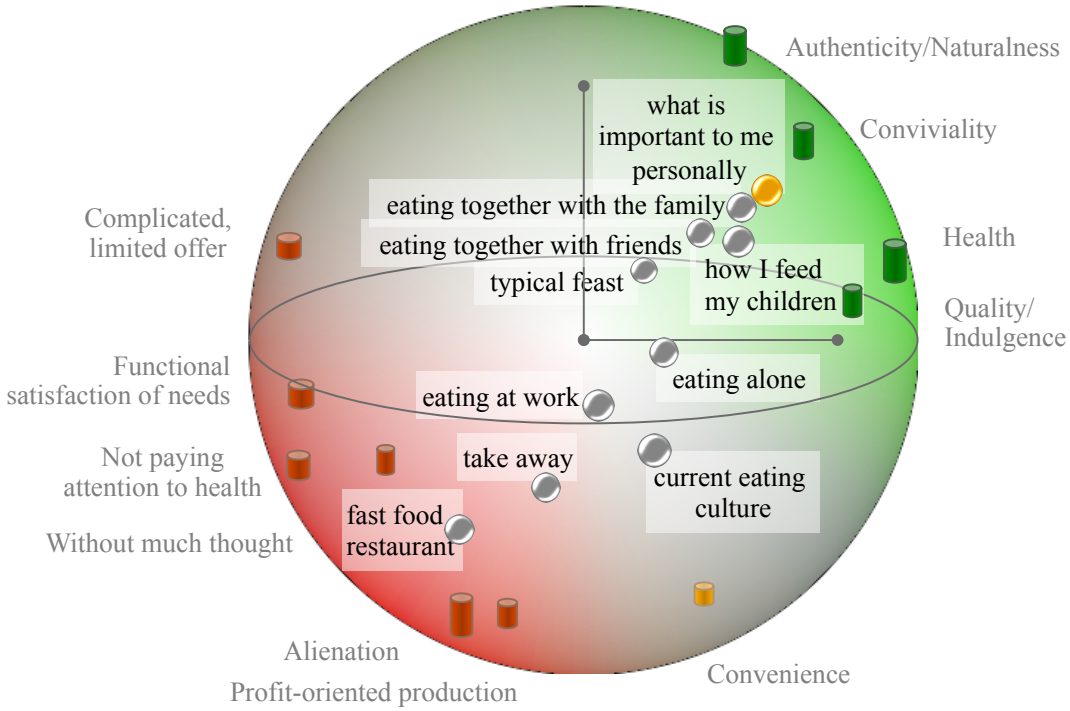
In contrast, the current eating culture is not situated close to the food-related values of authenticity/naturalness and conviviality, and it is not associated with any of the respective food topics – but rather with a number of their negatively evaluated counterparts. Consumers situate the current eating culture close to profit-oriented production and attribute to it the following topics: risk of long-term damage to health; use of chemical fertilisers and pesticides; and dubious manufacturing methods.

The current eating culture is also positioned near 'alienation'. Specifically, consumers associate the current eating culture with eating on the run; processed, mediocre taste; sterile, pre-packaged, ready-to-eat-products; artificial-tasting food; and being sceptical about ingredients.

There is one association in line with 'not paying attention to health' – namely, eating at irregular hours. Finally, consumers attribute many negatively evaluated price topics to the current eating culture, therefore signalling the subjective perception that food is often not worth the price they pay. Thus, there is a relatively big mismatch between what consumers want (e.g. what is important to them personally) and what they perceive the market (e.g. the current eating culture) offers.

The description of the individual ideal of eating already hints at social contexts of food. Different eating situations are clearly positioned at different distances from the personal food-related values (graphically depicted as cylinders with their respective name tags, see Figure 2).

Figure 2. Food-related values (green, red and orange cylinders with name tags), positioning of the elements 'what is important to me personally' (yellow circle), 'current eating culture' and different eating situations (grey circles) in a three-dimensional space.



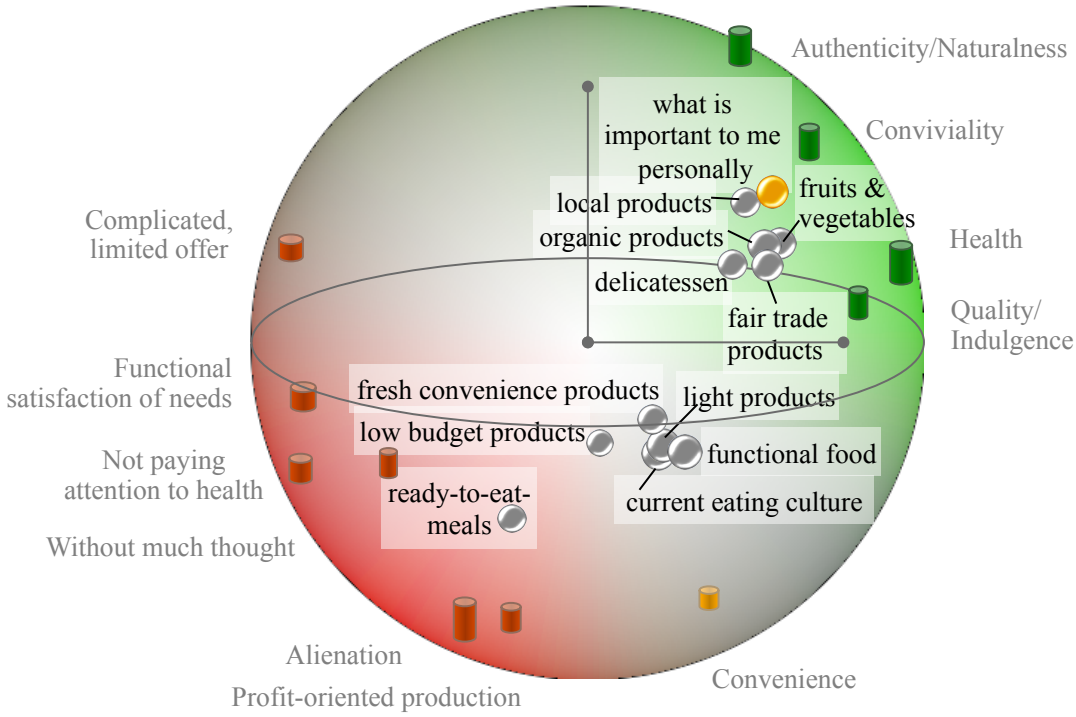
Note. Green cylinders indicate positively, red cylinders negatively, and orange cylinders ambivalently valued constructs. The closer the values and elements are to one another in the three-dimensional space, the more similar they are. The cylinders' height reflects the number of personal constructs associated with the respective value. The cylinders' width reflects the depth in the spatial position.

Positioned closest to the individual ideal of eating are social situations: eating with family or friends, typical feast (in the sense of a banquet), and feeding one's children. Eating alone is situated in the transition zone from the positive to the negative hemisphere and therefore evaluated ambivalently. Further analysis (not shown in the figure) reveals that position of the element eating alone is due to people's association of this eating situation with safe, quality products; fresh, natural, and local ingredients for meals; pleasure and even indulgence – but on the other side also with fast-pace, stress, and solitude.

Eating at work is even positioned somewhat (moderately) further away from the individual ideal than eating alone. More in-depth analysis shows that eating at work is associated with relatively few topics; it is first and foremost: practical, functional, modest, bland, and fast-paced. Even though it is positioned close to quality/indulgence, it is also near industrialised mass production.

Fast food restaurants are diametrically opposed to 'what is important to me personally', which means the embodiment of all the negative food-related values. More detailed analysis shows that the only positively evaluated topic associated with fast food restaurants is 'eating what one likes guilt-free'. Twenty-five out of 29 negatively evaluated topics were associated with fast food restaurants. The global meaning space obtained through the repertory grid technique clearly shows that there is interplay between situations and the salience of different food-related values.

Figure 3. Food-related values (green, red and orange cylinders with name tags), positioning of the element 'what is important to me personally' (yellow circle), 'current eating culture' and different food product categories (grey circles) in a three-dimensional space.



Note. Green cylinders indicate positively, red cylinders negatively, and orange cylinders ambivalently valued constructs. The closer the elements are to one another in the three-dimensional space, the more similar they are. The cylinders' height reflects the number of personal constructs associated with the respective value. The cylinders' width reflects the depth in the spatial position.

We further expected to find different food product categories positioned differently in the global meaning space and thus associated with distinct food-related values. The results show that various food product categories are evaluated differently.

Next to the individual ideal of eating are local products, fruits and vegetables, organic products, fair trade products and delicatessen (see Figure 3). These products symbolise what is personally important to people. Their positions indicate that they are associated with practically all positively evaluated food-related values: authenticity/naturalness, conviviality, health and quality/indulgence.

Ambivalently evaluated food product categories are positioned in the transition from the positive to the negative hemisphere. Fresh convenience products, light products, and functional food are situated close to the food-related values of health, quality/indulgence, and convenience. But on the other side, they are also situated near the negatively evaluated values of profit-oriented production and alienation.

Located even farther from the individual eating ideal are low-budget products, and ready-to-eat meals are the farthest away. Similar to fast food restaurants, ready-to-eat meals are positioned diametrically to 'what is important to me personally' and are associated with practically all negatively evaluated food-related values.

Discussion

The purpose of this study was to investigate what is important to people personally when they choose their food across different situations. Consumers desire authenticity/naturalness, conviviality, health, and quality/indulgence when they buy, prepare or eat food. The study confirms that people have elaborated personal food systems and that the multiple positively and negatively evaluated food-related values are interdependent and thus often a source of conflict in everyday food choices. In fact, this study identified a crucial dilemma of today's consumers: their personal values concerning food and eating differ significantly from their perceived food culture of today. This study also shows that different personal food constructs are associated with different social eating situations, and the same is true of different product categories. Therefore, some eating situations and product categories do not reflect, and are thus in conflict with, what is personally important to consumers.

The results of this study are in line with a number of recent findings showing an increasing importance of ethical and moral components in consumer behaviour, especially with regard to food products (Aertsens et al., 2009; Arvola et al., 2008; Guido, Prete, Peluso, Maloumby-Baka, & Buffa, 2010). Ethical aspects of consumption refer to the observation that consumers no longer consider only price and quality when they choose and buy food but also bear in mind criteria such as sustainable production processes. Even though consumers mentioned the word "sustainable" only rarely, the concept

of sustainability is mirrored in their desire for organic, fair trade and local production and their expectations for more naturalness and freshness.

Indeed, the rising market for organic food products is predominantly explained by consumers' growing interest in personal health and by ethical values and motives – such as environmental protection, animal welfare and fair trade (Honkanen, Verplanken, & Olsen, 2006; Magnusson, Arvola, Koivisto Hursti, Åberg, & Sjödén, 2003). In a review Aertsens et al. (2009) concluded that values are important motivators for consumers to purchase organic foods – in particular egocentric values such as health, related to the value security, and also taste, related to the value hedonism. The altruistic value universalism has a positive effect as well but is assumed to be more important for more regular consumers of organic food and for adolescents. Our study suggests that not only organic products tap the moral concepts of consumers but also local products, fair trade products, delicatessen and fruits and vegetables in general.

In addition, the results of this study also indicate that consumers' wants go beyond the desire for authenticity and naturalness. On the aggregated level of consumer perspective, taking time for food preparation and eating seems to be just as important as looking at where and how products are produced. This supports previous research and suggests that conviviality is a central aspect in the European eating culture (Fischler & Masson, 2008). Conviviality with regard to eating refers to the act of sociability, sharing, and maintenance of relationships when eating – a concept that clearly goes beyond the notion of eating solely to fill up the body's energy reserves. The concept of conviviality challenges the current food market, for in the perception of consumers in this

study there are only few products (e.g. organic, fair trade and local products) that meet these criteria (see Figure 3).

Less surprisingly, the findings also support high consumer awareness regarding healthy and safe food. With obesity rates growing worldwide – the World Health Organisation (2000) calls obesity a "global epidemic" – people are conscious of negative side effects of eating without limits. This study supports the view that people care about healthy and high-quality food products and that the current food market serves most of these needs. However, previous research showed that consumers often do not translate positive attitudes and intentions concerning healthy eating into action (Conner & Armitage, 2006).

The results of this study suggest an explanation of why people often cannot live up to all of their food-related values at the same time or in a certain situation. Consumers perceive a gap between their personal ideal of eating, their everyday life and concrete eating situations. Indeed, previous research showed that consumers are very ambivalent about moral and healthy eating (e.g. Shepherd, 1999). Values serve as guiding principles in people's lives, and this means that they do not always have to be translated into action one by one. Also, values may vary in importance and thus exert a bigger or smaller impact on behaviour. Nevertheless, Connors et al. (2001) showed that personal values matter in everyday food choice and, even more importantly, that consumers used the following main strategies to balance competing values: "(i) categorizing foods and eating situations; (ii) prioritizing conflicting food-related values for each eating situation; and (iii) balancing strategies and

priorities across eating situations" (p. 192). Our study extends these findings and suggests that many of the current food products and eating situations do not fulfil consumers' high expectations. But due to situational constraints, people still consume ready-to-eat products or go to fast food restaurants – both of which contradict at least some of consumers' personal values.

This study identified situational constraints that provide an explanation of the intention-behaviour gap (Gollwitzer & Sheeran, 2006). Consumers perceive various eating situations (e.g. eating alone, eating at work, fast food and takeaway) as limiting the potential to eat according their personal values. The results suggest that time and range of choice is a crucial variable influencing the possibility to fulfil food-related values. This is in line with Tanner and Wölfing Kast (2003), who examined personal and contextual factors that influence ecological friendly food purchases and identified perceived time barriers and frequency of shopping in supermarkets to be negatively associated with consumers' food-related values.

Additionally, previous research found that eating routines were central in everyday food choices: food consumption patterns as well as eating contexts were repeated (Jastran, Bisogni, Sobal, Blake, & Devine, 2009). These eating routines evolved because they fit best into consumers' work and family schedules and best matched their personal food choice values. But Jastran et al. (2009) also showed that eating routines are not synonymous with unintentional action; people monitored their eating routines, reconsidered and changed some of them when new contexts emerged.

Eating routines can become habits that even counteract values, attitudes and intentions – which is another possible explanation of the gap between personal ideals and the current eating culture found in the results. According to Verplanken and Aarts (1999), habits are "learned sequences of acts that have become automatic responses to specific cues, and are functional in obtaining certain goals or end-states" (p. 104). "Counterintentional habits" (Verplanken & Faes, 1999), for example, involve short-term hedonistic motives at the expense of long-term benefits of attaining valued goals. Thus, people may have the overall value to consume sustainable food products but fail to buy these products in a concrete situation due to their counterintentional eating habits.

Habits are particularly hard to change, because we are not even aware of them at the time of action. Only time and repetition of new behaviour patterns may result in breaking habits, but relapse into old habits is likely (Verplanken & Aarts, 1999). Creating new habits for the consumption of food products that correspond to a greater extent to people's values requires a careful analysis of relevant cues, responses and possible rewards.

Similarly, Maio et al. (2007) pointed out factors in lifestyle change for healthier eating behaviour with the purpose of countering the obesity trend. These factors can be divided into a two-level approach: one on the individual and one on the level of the behavioural context. Maio et al. emphasised that unhealthy behaviour is not necessarily the product of conscious intentions and attitudes. Rather, there are three key variables that compete with the individual's volitional control – namely, habit, automatic attitudes and

situational limitations. The goal of interventions that focus on the environment is to stimulate changes in the performance setting in order to prevent undesired habits and to reinforce desired habits. With respect to changing people's behaviour Maio et al. summarised that lifestyle "interventions should focus on salient beliefs, implementation intentions, while assessing emotional outcomes and impact on automatic attitudes" (p. 117). The present study contributes to an understanding of salient consumer beliefs with regard to buying, preparing and eating food.

Some aspects of this study deserve comment. First, the results apply most directly to the Swiss sample – the results cannot be generalised to other countries or cultures without further qualifications.

Second, based on the relatively small sample size further sub-analysis is not possible. The results present only the aggregated consumer perspective. It is possible that different groups of consumers or even individual consumers actually think differently and evaluate buying, preparing and eating food differently and thus endorse different personal values or rate the values' importance differently. Future research should focus on what values are how important to what individuals.

Third, food-related values do not necessarily translate directly into actual behaviour. Indeed, one of the study's main findings is that people recognise quite clearly that their personally important values are only partially represented in the current eating culture – of which they are part. It remains to be studied what, and how, food-related values influence actual food behaviour. For instance, there might be a difference between individuals who have food

choice responsibility for a whole family or only for themselves. Other intervening variables, such as socioeconomic status, gender, residence, age, etc., should be taken into account.

Despite these limitations, this study provides additional insights on salient food-related attitudes and values and shows how highly elaborated these concepts are. In fact, for each element it is possible to conduct further analysis and elaborate an exact profile on the food topics (as we did with 'current eating culture'). This allows for a detailed strength and weakness analysis, which is of great relevance for product development, marketing, strategic enhancement of the product itself, product range and development of useful services for the customer.

The study findings have practical implications for food suppliers – namely, concerning providing value-congruent food solutions – but also for the government in the case that the market fails to make these offers available (e.g. in the form of governmental regulations regarding production and processing). The findings suggest two consequences to act upon.

First, people today are highly sceptical about the business model of food markets and suspect that the food offer is only oriented to short-term profit instead of being compatible with, and subordinate to, a long-term perspective that is reconcilable with sound environmental practices. The food industry and suppliers – from restaurants to supermarkets – need to prove their good intentions and regain consumer confidence (see also Bosshart & Hauser, 2008; Bosshart, Muller, & Hauser, 2010).

Second, consumers' food-related values are highly elaborated, which challenges the entire food supply chain "from farm to fork" to address consumers' needs, not only in terms of taste and price but also regarding health and ethical criteria. Consumers expect the food market to cater to all of these food-related values and not just to some of them. Some niche markets are already addressing this (e.g. Slow Food), but the challenge remains to make these concepts available to the mass market.

We believe that this study contributes to our understanding of consumers' food-related values and their interplay with different situations; it is therefore a useful basis on which to reconsider food companies' strategic alignment.

References

Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: a review. *British Food Journal, 11*(10), 1140-1167.

Ajzen, J. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211.

Arvola, A., M. Vassallo, Dean, M., Lampila, P., Saba, A. Lähteenmäki, L., & Shepherd, R. (2008). Predicting intentions to purchase organic food: the role of affective and moral attitudes in the theory of planned behaviour. *Appetite, 50*(2-3), 443-454.

Bannister, D., & Mair, J. M. (1968). *The evaluation of personal constructs.* London: Academic Press.

Bosshart, D., & Hauser, M. (2008). *European food trends report.* GDI study No. 29. Rüschlikon, Switzerland: Gottlieb Duttweiler Institute.

Bosshart, D., Muller, C., & Hauser, M. (2010). *European food trends report.* GDI study No. 32. Rüschlikon, Switzerland: Gottlieb Duttweiler Institute.

Brunsø, K., Grunert, K. G., & Bredahl L. (1996). An analysis of national and crossnational consumer segments using the food-related lifestyle instrument in Denmark, France, Germany and the United Kingdom, *MAPP Working Paper No. 36*. Aarhus, Denmark: The Aarhus School of Business.

Brunsø, K., Scholderer, J., & Grunert, K.G. (2004). Closing the gap between values and behavior: A means-end theory of lifestyle. *Journal of Business Research, 57*(6), 665-670.

Catina, A., & Schmitt, G. M. (1993). Die Theorie der persönlichen Konstrukte [The theory of personal constructs]. In J. W. Scheer & A. Catina (Eds.), *Einführung in die Repertory Grid-Technik* (pp. 11-23). Bern, Switzerland: Hans Huber.

Conner, M., & Armitage, C.J. (2006). Social psychological models of food choice. In R. Shepherd & M. Maats (Eds.), *The psychology of food choice* (pp. 41-57). Oxfordshire, United Kingdom: CABI.

Conner, M., Povey, R., Sparks, P., James, R., & Shepherd, R. (2003). Moderating role of attitudinal ambivalence within the theory of planned behaviour. *British Journal of Social Psychology, 42*(1), 75-94.

Connors, M. M., Bisogni, C. A., Sobal, J., & Devine, C. (2001). Managing values in personal food systems. *Appetite, 36*(3), 189-200.

Dick, M. (2000). The application of narrative grid interviews in psychological mobility research. *Forum: Qualitative Social Research, 1(2).* Retrieved from: http://www.qualitative-research.net/index.php/fqs/article/view/1075/2339.

Feather, N. K. (1999). *Values, achievement, and justice: Studies in the psychology of deservingness*. New York: Kluwer Academic/Plenum Publishers.

Fischler, C., & Masson, E. (2008). *Manger: Francais, Européens et Americains face a l'alimentation [Eating: French, European and American opinions towards food]*. Paris: Editions Odile Jacob.

Fransella, F., & Bannister, D. (1967). A validation of repertory grid technique as a measure of political construing. *Acta Psychologica, 26,* 97-106.

Fromm, M. (2004). *Introduction to the repertory grid interview.* Münster, Germany: Waxmann.

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: a meta-analysis of effects and processes. *Advances in Experimental Social Psychology, 38,* 69-119.

Guido, G., Prete, M. I., Peluso, A. M., Maloumby-Baka, R. C., & Buffa, C. (2010). The role of ethics and product personality in the intention to purchase organic food products: A structural equation modeling approach. *International Review of Economics, 57*(1), 79-102.

Grunert, K. G., Brunsø, K., Bredahl, L., & Bech, A.C. (2001). Food-related lifestyle: A segmentation approach to European food consumers. In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society. A European perspective of consumers' food choices* (pp. 211-229). Berlin-Heidelberg, Germany: Springer.

Honkanen, P., Verplanken, B., & Olsen, S. O. (2006). Ethical values and motives driving organic food choice. *Journal of Consumer Behaviour, 5*(5), 420-430.

Jastran, M. M., Bisogni, C. A., Sobal, J., Blake, C., & Devine, C. M. (2009). Eating routines: Embedded, value based, modifiable, and reflective. *Appetite, 52*(1), 127-136.

Kelly, G. A. (1955). *The psychology of personal constructs, Vols. 1 and 2*. New York: Norton.

Kruse, P., Dittler, A., & Schomburg, F. (2007). Nextexpertizer, nextcoach, nextmoderator: Kompetenzmessung aus der Sicht der Theorie kognitiver Selbstorganisation [Nextexpertizer, nextcoach, nextmoderator: Assessing competence according the theory of cognitive self-organisation]. In J. Erpenbeck & L. Rosenstiel (Eds.), *Handbuch Kompetenzmessung* (pp. 515-543). Stuttgart, Germany: Schäffer-Poeschel.

Lohaus, A. (1993). Testtheoretische Aspekte der Repertory Grid-Technik [Test-theoretical aspects of the repertory grid technique]. In J. W. Scheer & A. Catina (Eds.), *Einführung in die Repertory Grid-Technik* (pp. 80-91). Bern, Switzerland: Hans Huber.

Lüdi, N., & Hauser, M. (2010). Consumer Value Monitor. GDI study No. 35. Rüschlikon, Switzerland: Gottlieb Duttweiler Institute.

Magnusson, M. K., Arvola, A., Koivisto Hursti, U.-K., Åberg, L., & Sjödén, P.-O. (2003). Choice of organic foods is related to perceived consequences for human health and to environmentally friendly behaviour. *Appetite, 40*(2), 109-117.

Maio, G. R., & Olson, J. M. (1994). Value-attitude-behavior relations: The moderating role of attitude functions. *British Journal of Social Psychology, 33,* 301-312.

Maio, G. R., Olson, J. M., Bernard, M. M., & Luke, M. A. (2003). Ideologies, values, attitudes, and behavior. In J. Delamater (Ed.), *Handbook of social psychology* (pp. 283-308). New York: Kluwer Academic/Plenum Publishers.

Maio, G. R., Verplanken, B., Manstead, A. S. R., Stroebe, W., Abraham, C., Sheeran, P., & Conner, M. (2007). Social psychological factors in lifestyle change and their relevance to policy. *Social Issues and Policy Review, 1*(1), 99-137.

Marreiros, C., & Ness, M. (2009). A conceptual framework of consumer food choice behaviour. *CEFAGE-UE Working-Paper 2009/06.*

Raeithel, A. (1990). Arbeiten zur Methodologie der Psychologie und zur Kelly-Matrizen-Methodik [Work on the methodology of psychology and Kelly matrix method]. Hamburg, Germany: Unpublished habilitation treatise at Department of Psychology, University of Hamburg, Hamburg, Germany.

Riemann, R. (1983). Die Erfassung individueller Einstellungen mit Hilfe der Gridtechnik [Measuring social attitudes using repertory grid technique]. *Zeitschrift für Sozialpsychologie, 14,* 139-151.

Riemann, R. (1991). Repertory Grid Technik: Handanweisung [Repertory grid technique: Manual]. Göttingen, Germany: Hogrefe.

Rohan, M. J. (2000). A rose by any name? The value construct. *Personality and Social Psychology Review, 4*(3), 255-277.

Rokeach, M. (1973). *The nature of human values.* New York: Free Press.

Rozin, P. (2006). The integration of biological, social, cultural and psychological influences on food choice. In R. Shepherd & M. Maats (Eds.), *The psychology of food choice* (pp. 19-40). Oxfordshire, United Kingdom: CABI.

Saba, A. (2001). Cross-cultural differences in food choice. . In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society. A European perspective of consumers' food choices* (pp. 233-246). Berlin/Heidelberg, Germany: Springer.

Scheer, J. W. (1993). Planung und Durchführung von Repertory Grid-Untersuchungen [Planning and conducting repertory grid investigations]. In J. W. Scheer & A. Catina (Eds.), *Einführung in die Repertory Grid-Technik* (pp. 24-40). Bern, Switzerland: Hans Huber.

Scheer, J. W., & Catina, A. (1993). Einführung in die Repertory Grid-Technik [Introduction to the repertory grid technique]. Bern, Switzerland: Hans Huber.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology,* Vol. 25 (pp. 1-65). New York: Academic Press.

Shepherd, R. (1999). Social determinants of food choice. *Proceedings of the Nutrition Society, 58*(4), 807-812.

Shepherd, R. (2001). Does taste determine consumption? Understanding the psychology of food choice. In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society. A European perspective of consumers' food choices* (pp. 117-130). Berlin/Heidelberg, Germany: Springer.

Sparks, P., & Shepherd, R. (1992). Self-identity and the theory of planned behaviour: assessing the role of identification with "green consumerism". *Social Psychology Quarterly, 55*(4), 388-399.

Sparks, P., Shepherd, R., & Frewer, L.J. (1995). Assessing and structuring attitudes toward the use of gene technology in food production: the role of perceived ethical obligation. *Basic and Applied Social Psychology, 16*(3), 267-285.

Slater, P. (1977). *The measurement of intrapersonal space by grid technique. Vol. 2: Dimensions of interpersonal space.* London: Wiley.

Tanner, C., & Wölfing Kast, S. (2003). Promoting sustainable consumption: Determinants of green purchases of Swiss consumers. *Psychology & Marketing, 20*(10), 883-902.

Verplanken, B., & Aarts, H. (1999). Habit, attitude, and planned behaviour: Is habit an empty construct or an interesting case of goal-directed automaticity? *European Review of Social Psychology, 10*(1), 101-134.

Verplanken, B., & Faes, S. (1999). Good intentions, bad habits, and effects of forming implementation intentions on healthy eating. *European Journal of Social Psychology*, *29*, 591-604.

Verplanken, B., & Holland, R. W. (2002). Motivated decision making: Effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology, 82*(3), 434-447.

Vinson, D. E., Scott, J. E., & Lamont, L. M. (1977). The role of personal values in marketing and consumer behavior. *Journal of Marketing, 41*(2), 44-50.

World Health Organisation, W.H.O. (2000). *Obesity: Preventing and managing the global epidemic. Technical Report 894.* Geneva, Switzerland: World Health Organisation.

Willutzki, U., & Raeithel, A. (1993). Software für Repertory Grids [Software for repertory grids]. In J. W. Scheer & A. Catina (Eds.), *Einführung in die Repertory Grid-Technik* (pp. 68-79). Bern, Switzerland: Hans Huber.

Footnotes

1. As Fromm (2004) points out, it is comparatively easy to guarantee the objectivity of both the execution and evaluation of grid elicitation, especially in the case of computer elicitations. Re-test reliability coefficients for personal construct relations range from 0.6 to 0.8 according to Bannister and Mair (1968). The prediction of actual behaviour, e.g. voting in political elections, through personal constructs shows high external validity (Fransella & Bannister, 1967).

2. A list of all the elements can be obtained from the authors.

3

Cheap, convenient, or conscious? The impact of food-related values on food purchase behavior and the mediating role of attitudes

Mirjam Hauser, Fridtjof W. Nussbeck, and Klaus Jonas

Department of Psychology, University of Zurich

Submitted to *Psychology & Marketing* (July 2012)

Corresponding author: Mirjam Hauser, c/o Klaus Jonas, Department of Psychology, University of Zurich, Binzmühlestrasse 14/13, 8050 Zurich, Switzerland. E-mail: mirjam.hauser@uzh.ch

Acknowledgments

This research was supported by Migros-Genossenschafts-Bund (MGB), Zurich, Switzerland, and the Gottlieb Duttweiler Institute (GDI), Zurich, Switzerland.

Abstract

Personal values and attitudes can help to explain food choice. This study confirmed a hierarchical organization of the value–attitude–behavior chain: Food-related values influence attitudes, and these, in turn, impact behavior. Contrary to previous findings, values are only partially mediated by attitudes: Some food-related values are fully mediated, whereas others are partially mediated, and still others have exclusively direct effects on purchase behavior.

Questionnaire data from a roughly representative sample of 851 adults living in Switzerland was complemented with actual food purchase behavior measured by a loyalty card of a Swiss retailer over the period of one year. Four theoretically derived structural equation models were compared across eight different food product categories (organic, fair trade, low-budget, fresh convenience, ready-to-eat, light, functional foods, fruits and vegetables).

The results question central assumptions of the theory of planned behavior and emphasize the role of food-related values in food consumption. Implications for marketing and future product developments of food companies are discussed.

Keywords: Values; Attitudes; Food choice; Consumption behavior; SEM

> *I (...), like Allport, believe that value systems are the fundamentally important construct for understanding and predicting people's attitudes and behavior, (...) (Rohan, 2000, p. 273).*

Consumers in countries with a broad range of food options and new products introduced to the market daily are faced with the agony of choice. The same basic human need for food can be fulfilled by diverse products and in various ways. Consumers put foods into their shopping basket that vary from cheap to expensive, from healthy to indulgent, from basic to value-added – to name only a few of the possibilities.

To comprehend patterns of food choices, psychologists and others have studied their behavioral antecedents and the interplay of values, attitudes, habits, impulses, and lifestyle. Out of these, values and attitudes are important guiding forces in human life in general as well as in the food context. Whereas values are regarded as abstract ideals that serve as guiding principles in people's lives and transcend specific situations or objects, attitudes are seen as tendencies to evaluate objects or entities positively or negatively (Maio, Olson, Bernard, & Luke, 2003; Verplanken & Holland, 2002). Ultimately, every behavior and every attitude is traceable to the personal value system (Allport, Vernon, & Lindzey, 1960; Feather, 1995; Rohan, 2000; Rokeach, 1973; Schwartz, 1992). Thus, understanding personal value systems is essential for strategic marketing and future product development because the structure and interplay of values guide, justify and explain attitudes and actions.

Most theories suggest that there are reciprocal influences between values, attitudes and behavior; but little is known about the exact process by which values coordinate people's attitudes and behavior (Rohan, 2000). Given the importance of values and attitudes in consumption behavior and the open questions about their interplay, the focus of this study is the functioning of the value–attitude–behavior chain in the area of food. Food consumption is a particularly meaningful domain to study the relations between values, attitudes, and behavior, because food and eating are an essential aspect of people's ordinary lives. The aim of our research is to understand the impact of food-related values on actual consumer behavior and the mediating role of attitudes within a broad range of eight different food product categories.

Conceptual framework

Values and food choice

Values have been linked to specific food choice behavior. For example, the growing market for organic food has been related to a predominance of certain values: Most research studies found that consumers' willingness to buy (and often pay a higher price for) organic products is explained by the importance of ethical and moral values (e.g., Arvola et al., 2008; Guido, Prete, Peluso, Maloumby-Baka, & Buffa, 2010; Honkanen, Verplanken, & Olsen, 2006; Magnusson, Arvola, Koivisto Hursti, Åberg, & Sjödén, 2003; Tanner & Wölfing Kast, 2003; Tarkiainen & Sundqvist, 2009). In a review, Aertsens, Verbeke, Mondelaers, and Van Huylenbroeck, (2009) concluded that global values – such as security, hedonism, stimulation, universalism, benevolence,

and self-direction (Schwartz, 1992) – are positively correlated with consumers' choice of organic foods.

Personal values (e.g., security, warm relationship with others, self-fulfillment, a sense of belonging, excitement, etc.) can possibly also influence consumption of low-involvement products, such as convenience foods, and more impulsive food choices, such as snack foods. Goldsmith, Freiden and Henderson (1997) found that personal values were not only related to attitudes towards snack foods but also to self-reported consumption of convenience foods like ready-to-eat products. The value of warm relationship with others, for example, was a significantly negative predictor of a pro-snacking attitude and purchase of convenience food.

Other findings point to cultural influences on the relationship between values and food behavior, as differences in the driving values for the purchase of organic foods have been found, for example, between Germany and the United Kingdom (Baker, Thompson, Engelken, & Huntley, 2004).

Structure of values

Values have also been given special attention in the fields of consumer psychology and strategic marketing for several decades. Vinson, Scott, and Lamont (1977) made an important distinction by arguing that personal values are arranged in a hierarchical network of three levels that are mutually dependent and ultimately influence preferences for consumer products and services. Vinson et al. propose a structure in which values are organized on a dimension from centrally to rather peripherally held beliefs.

On the first, and deepest-rooted, central level are global values (such as security, warm relationship with others, etc.). These values are abstract, generalizable, enduring beliefs concerning desired states of existence or modes of behavior; they form the central core of an individual's value system – comparable to values in global values theories. One of the currently most popular gobal values theory was introduced by Schwartz (1992) building on earlier approaches (Rokeach, 1973) – it includes ten motivationally distinct values which were validated cross-culturally.

The second level consists of domain-specific values that influence behavior only in the context of a specific environment (e.g., beliefs around food, mobility, living, religion, or other activities).

On the third level are the less centrally held evaluative beliefs about any concrete object or entity (e.g., beliefs used in expectancy-value and attitude research). Thus, domain-specific values bridge the gap between the more abstract, centrally held global values and the more peripherally held descriptive and evaluative beliefs.

Another approach often used to gain insight into consumer values, yet with similar assumptions about the hierarchical structure of personal beliefs and values, is the means-end chain model proposed by Gutman (1982). Means-end theory explains how perceived product attributes help consumers to achieve desired end-states and actualize personal values. The means-end chains (of a certain product or product category) can be summarized in hierarchical value maps and have been used, for example, to detect motives behind buying organic foods or detesting genetically modified foods (Grunert, 2010).

Means-end chains can also be structured into three levels that are comparable to the levels described by Vinson et al. (1977). On the top level are again the abstract, rather global personal values. On the bottom level are the product perceptions that are situation-specific. In-between are the domain-specific values that can be inherent to a person's lifestyle (Brunsø, Grunert, & Bredahl, 1996; Brunsø, Scholderer, & Grunert, 2004; Grunert, Brunsø, Bredahl, & Bech, 2001). For example, food-related values, measured via personal food-related lifestyles, provide the link between global personal values and situation-specific perceptions and actions. In fact, Brunsø et al. (2004) showed that food-related lifestyles are strict mediators of the value–behavior relationship.

Theories about the value–attitude–behavior chain

Personal values can help to explain why an individual holds certain attitudes, behaves in certain ways, and displays contradictory attitudes and behaviors. For example, a person might have mixed feelings about ready-to-eat products – which are convenient but often not very environmentally friendly – if this person holds the values of sustainability and convenience dear. In this case, the person can only act in favor of one of these values, acting against the other value at the same time.

Theories, such as the food choice process model (Connors, Bisogni, Sobal, & Devine, 2001), place food-related values at the core of personal food choices. A central finding of this theory is that people hold various food-related values dear but face the dilemma of not being able to actualize all of them at

once. Instead, they have to negotiate their values (indulgence versus health, convenience versus taste, sustainability versus price). Everyday food choices are seen as the result of an individual set of values and personal strategies for managing, negotiating, prioritizing, and balancing these values. The food choice process model does not explicitly consider the role and influence of attitudes. Rather, we can deduce from it the hypothesis that personal values influence eating behavior directly.

Other theories assume that attitudes are the central concepts for understanding behavior. The role of attitudes and their impact on behavior have been investigated in general but also more specifically with regard to consumption and food behaviors. The prominent theory of planned behavior (Ajzen, 1991) is one of the models successfully applied to understanding and predicting food purchase intentions and behavior (Conner, Povey, Sparks, James, & Shepherd, 2003).

In the theory of planned behavior, behavior depends on intention, which in turn is influenced by attitude towards the behavior, subjective norm, and perceived behavioral control. Furthermore, attitude towards behavior, subjective norm, and perceived behavioral control can be influenced through their respective underlying beliefs by background factors such as values, knowledge, age, income, and personality traits. Ajzen (2005) wrote that these background factors "influence intentions and behavior indirectly by their effects on the behavioral, normative, or control beliefs and, through these beliefs, their effects on attitudes, subjective norms, or perceptions of control" (p. 135). Hence, the theory of planned behavior assumes that attitudes fully

mediate the relationship between values and behavior – which Homer and Kahle (1988) showed, for example, in the case of buying natural foods. Values were associated more strongly with attitudes about nutrition than with the purchasing of natural foods. Specifically, values did not predict behavior directly, but values predicted attitudes, which in turn predicted shopping behavior. These findings support the idea of a hierarchical value-attitude-behavior organization and, thus, the mediating role of attitudes.

In contrast to the emphasis on reasoning in the theory of planned behavior, most consumption situations include both reflective and impulsive components that contribute jointly to a given behavior, as is stated in the reflective-impulsive model of consumer behavior by Strack, Werth, and Deutsch (2006). Reflective components, such as rule-based reasoning, are most influential if the consequences of a purchase are important or if there is an anticipated need to justify the decision. As a result, the reflective system generates explicit, propositional decisions and serves regulatory and representational goals (such as overcoming habits or devising action plans in new situations).

The impulsive system, however, works comparatively effortlessly, because information is processed automatically and thus does not depend on cognitive resources. A classic example of the functioning of the impulsive system is impulse buying – a sudden purchase with no pre-shopping intentions that derives from a desire elicited on the spot and seeks immediate gratification.

Impulsive elements in the decision and buying process are reinforced, inter alia, through habits. Habits develop through sufficient and satisfactory repetition in stable contexts (Verplanken & Aarts, 1999). The weekly or even daily act of buying food is often experienced as routine, and people do not usually consider all the pros and cons of each item that they put into their shopping cart. In line with the reflective-impulsive model, this saves mental effort and probably time while executing the habitual behavior.

General habits (such as always buying the cheapest available food or habitually buying organic products) can derive from values that have become central and part of a person's self-concept (Verplanken & Holland, 2002). This is explained through the assumption that central values are enacted repeatedly in a variety of situations, which is a prerequisite of building a habit. For example, a person who holds the central value of environmental protection might try to behave in environmentally friendly ways and, thus, habitually buys organic, local, and seasonal products. According to the reflective-impulsive model of consumer behavior, it is plausible to hypothesize that values can have both direct effects on eating behavior and indirect effects, mediated by attitudes.

Four structural models for the relation between food-specific values, attitudes, and consumption behavior

Whereas the theories of Vinson et al. (1977), Gutman (1982) and Brunsø et al. (2004) propose a hierarchical structure from concrete, specific beliefs to more abstract, global values; Homer and Kahle (1988) found a similar hierarchical

organization between personal values, attitudes, and food choice. Most theories suggest that there are reciprocal influences in the value–attitude–behavior chain; but the exact process in which values influence behavior is still open to question (Rohan, 2000). Moreover, there are no models connecting domain-specific values (such as food-related values), attitudes, and behavior. Linking theories about the impact of values on behavior, the hierarchical organization of values and the values-attitudes-behavior chain, we propose four structural models to be compared against each other:

- a "direct-effects" model, assuming that food-related values and attitudes are on the same hierarchical level, both influence behavior directly, and values do not influence attitudes, thus, no mediation (related to the food choice process model);
- a "full-mediation" model, assuming that food-related values influence attitudes, and attitudes influence behavior, but that there are no direct effects of values on behavior (derived from the theory of planned behavior);
- a "partial-mediation" model, assuming that food-related values influence attitudes, and attitudes influence behavior, but allowing for direct effects of food-related values on behavior (inferred from the reflective-impulsive model); and
- an "adjusted partial-mediation" model, with assumptions similar to the "partial-mediation" model, but presuming that depending on the food product categories, only certain food-related values have significant

effects on attitudes and behavior respectively (which results in different impact patterns between the different food product categories).

In this study, we investigate in what way food-related values influence purchase within a range of different food product categories in Switzerland. Food-related values are hypothesized to have explanatory power with respect to attitudes towards certain food product categories; and both should predict the purchase of certain food product categories. Thus, we will explicitly test the mediating role of attitudes linking food-related values to food purchase behavior. It is conceivable that certain values have divergent effects on the different food products categories. Therefore, separate analyses will be run for different food product categories. Additionally, we will test if there is complete or partial mediation.

Method

Data collection

With the help of a market research institute, potential participants for the study were invited to fill out an online self-administered questionnaire in German or French. They received a small monetary compensation for participation. All participants had to be (1) the person responsible for food shopping in their household (i.e., main responsibility or together with someone else), and (2) owner of a specific Swiss retailer's loyalty card. These loyalty cards are very popular in Switzerland: 4 out of 5 households own a card of this retailer. The loyalty card records every article purchased whenever the customer shows it to

the cashier (which is the case in 79% of the purchases).[1] The customer earns one point for every Swiss franc spent in the shop and in turn receives monetary rewards for future shopping. More than 2/3 of the sample indicated that they spent more than half (M = 63%, SD = 23%) of their total food expenditure in that particular retailer chain.[2] Participants declared their consent to us using the records from their shopping card for analysis of their food purchase behavior.

The final sample consists of N = 851 participants (N = 494 women) in two regions of Switzerland: 647 participants in the German-speaking and 204 in the French-speaking region. Age was indicated in categories and structured as follows, 18-29 years: N = 129; 30-49 years: N = 393; and 50 years and older: N = 329. The sample corresponds roughly to the Swiss population in terms of household structure and socioeconomic status, such as education, income, and occupation (Swiss Federal Statistical Office, 2010).

Measures

Food purchase behavior. Food purchase behavior was recorded for a period of one year prior to participants' filling out the questionnaire. We use these aggregated behavioral data as a proxy for future behavior: Past behavior, which is performed daily or weekly in stable context, is significantly correlated with future behavior (r = .64, Ouellette & Wood, 1998). Food products were classified in one of the following eight categories: organic products (e.g., certified organic milk, certified organic bread), fair trade products (such as certified fair trade bananas or certified fair trade honey), low-budget products (a product line selling only the most basic and economic version of a certain

product, e.g., "low-budget jam"), fresh convenience products (such as sandwiches, ready-to-eat salads, perishable ready-to-eat foods), ready-to-eat products (such as non-perishable canned food or frozen pizza), light products (a product line selling foods with fewer calories, e.g., less fat in the case of "light cheese"), functional foods (such as probiotic yogurt, juice with added vitamins, etc.), and last, fruits & vegetables (fresh pears, tomatoes, etc.). The purchase behavior in the food product categories was measured as the amount of Swiss francs spent for a particular category divided by the total amount of Swiss francs spent for food products in general.

Food-related values. Food-related values were measured using a newly created measure. This measure is based upon two antecedent studies about salient personal food-related values (Hauser, Jonas, & Riemann, 2011; Lüdi & Hauser, 2010). These values were: authenticity/naturalness, conviviality, health, quality/indulgence, convenience, and price sensitivity. Participants had to rate "how important" several items of a specific value were to them on a seven-point scale (from 1 = *not at all*, to 7 = *very*). For the current study, we chose the two most reliable items (in terms of standardized factor loadings and indicator reliability) for each of the seven values (see Table 1). Due to the reduction of number of items, a minor change of meaning resulted in the value of authenticity/naturalness, which is why we call this value sustainability. Also, the value of quality/indulgence had to be separated into two independent factors (see CFA in the results' section).

Table 1. Items measuring food-related values.

It is important to me…		Std. factor loading	Indicator reliability	Value (Cronbach's α)
…to look for environmentally and animal friendly production and processing when shopping for groceries. (S)	Parcel	0.86	.74	Sustainability/Quality (α = .84)
…that foods are fresh and untreated. (Q)				
…to know how the products were produced and where they come from. (S)	Parcel	0.85	.73	
…to get reliable quality through buying controlled and certified products. (Q)				
…to eat and enjoy food in a calm atmosphere, to relax over a meal prepared with love and care.		0.72	.52	Conviviality (α = .70)
…to take the time to prepare and cook food myself.		0.77	.59	
…to have a balanced diet and make healthy choices.		0.80	.64	Health (α = .70)
…to have light and wholesome meals.		0.67	.45	
…to reward myself with a little food treat once in a while.		0.53	.28	Indulgence (α = .52)
…to eat a wide variety of appealing foods.		0.67	.45	
…to have ready-to-eat meals, because they are easy, convenient, and available anytime.		1.0	1.0	Convenience
I know exactly where I can buy what groceries at the lowest price.		0.75	.56	Price sensitivity (α = .78)
I am well informed about the prices at the different grocery stores.		0.86	.75	

Note. The translation of the original German items into English was done by the authors. Sustainability is measured by two item-parcels that each comprise one original (Q) quality- and one (S) sustainability-item (see description of CFA in the result's section).

Food-related attitudes. Attitudes towards the eight different food product categories (organic, fair trade, low-budget, fresh convenience, ready-to-eat, light, functional foods, and fruits & vegetables) were measured with two items each. We asked how much participants liked the foods (from 1 = *I don't like*, to 7 = *I like*) and how they rated the foods on a seven-point bad–good dimension.

Both questionnaires were administered in German or in French. A native speaker translated it from German to French, and two bilingual experts checked the translations.[3]

Analytic strategy

In a first step, the joint measurement model for the seven different values with each having two indicators was tested using a confirmatory factor analytic (CFA) approach. In a second step, structural equation models (SEMs) were estimated separately for each food category. We compared the four different structural models (direct-effects, full-mediation, partial-mediation, and adjusted partial-mediation model) for each of the eight food product categories. If the partial-mediation model fitted well, we tested for complete or partial mediation.

In the "adjusted partial-mediation" model we did a cross-validation by dividing the sample randomly into a main sample (N = 557) and a subsample (N = 294). Taking the main sample as input data, we removed non-significant regression paths in the "adjusted partial-mediation" model (that is, the latent variable remains in the model and is correlated with the exogenous variables but not with the mediator or criterion). We then cross-validated these SEMs

with the subsample. No major discrepancies were found between the result patterns of these two subsamples; henceforth, we describe and discuss only results based on the full sample (combining the two subsamples).

All analyses were carried out using AMOS19 (Arbuckle, 2010) based on the variance-covariance matrix and means of indicators. Given the item range of 1 to 7, we used maximum likelihood estimation (see Finney & DiStefano, 2006). Model fit was evaluated relying on the following criteria: χ^2 / *df* < 3 (due to the relatively large sample); RMSEA < .08; CFI > .95 (Iacobucci, 2010; Schermelleh-Engel, Moosbrugger, & Müller, 2003). Additionally, we inspected adequacy and interpretability of parameter estimates (Marsh, Hau, & Wen, 2004).

Comparisons of the four different models, which are not completely nested, were based on information-theory measures (AIC, ECVI): Smaller values reflect a better fit in the hypothesized model (Byrne, 2010). For the nested models (full versus partial mediation models), we used the χ^2 difference test to assess the model fit. If the chi-square difference is significant, the null hypothesis of equal fit for both models can be rejected and the less restricted model, in our case the partial mediation model, should be retained (Schermelleh-Engel et al., 2003).

Results

Results of the first CFA indicated that although quality and indulgence were conceptualized as one construct, the items measuring this construct were not homogeneous and thus had to be separated into a quality and an indulgence

factor. The following CFA showed that the newly separated quality factor could not be distinguished from the sustainability factor. Therefore, these two constructs were collapsed, and two item parcels were created, containing one original sustainability item and one quality item each (see Little, Cunningham, Shahar, & Widaman, 2002). Additionally, the factor loadings of the price items both had to be fixed to 1. With these adjustments the model fitted the data well ($\chi^2 = 84.7$; $df = 31$; $p < .01$; $\chi^2 / df = 2.73$; RMSEA = .05; CFI = .98).

All standardized factor loadings of the items were significant and varied between .67 and .86, with the exception of one item that was significant but had a factor loading of .53 (see Table 1 for details). Attitudes towards the eight different food product categories were measured with two items each.

The attitude measures show good internal consistencies with Cronbach's Alpha being above .80 (Cronbach's Alpha for attitudes toward: organic products = .89; fair trade products = .89; low-budget products = .89; fresh convenience products = .88; ready-to-eat products = .90; light products = .91; functional foods = .87; fruits & vegetables = .81). Taken together, the item reliability satisfies the internal consistency, and the measurement model shows acceptable global fit.

Bivariate correlations can be found in Table 2. The correlations indicate that the six food-related values are partly associated but distinct values. Price sensitivity showed only weak associations with the other variables. That is, one can be price sensitive in combination with high or low scores on the other values. Additionally, persons who tended to value sustainability tended to

value conviviality, health, and indulgence (all $r > .38$) but not to value convenience (negative correlation).

Values and attitudes were not very highly correlated with some exceptions: Persons who valued sustainability or health perceived fruits/vegetables, organic, and fair trade foods as good. Attitudes towards fruits/vegetables were also positively correlated with the values of conviviality, indulgence, and slightly with price sensitivity but negatively with the value of convenience. People with favorable attitudes towards ready-to-eat products tended to value convenience but not conviviality, health, or sustainability/quality.

Every single food product-specific attitude was correlated significantly with purchasing the respective food products: Some showed weaker correlations (in the case of functional foods, ready-to-eat products and fruit/vegetables), and the others showed stronger correlations (all $r > .30$). People who valued sustainability and health tended to buy more fruits/vegetables, organic, and fair trade foods. In contrast, the values of indulgence, convenience, and price sensitivity were negatively correlated with the purchase of organic products. People who were price sensitive tended to buy more low-budget products – in contrast, the values of sustainability and health speak against buying low-budget products. The purchase of fresh convenience or ready-to-eat products was correlated positively with the values of convenience but negatively with conviviality and health. Purchase of light and functional food products was only weakly but exclusively correlated with the value of health.

Table 2.

Correlations between food-related values, attitudes, and purchase behavior.

		Food-related values						Attitudes*
		1	2	3	4	5	6	
Food-related values	Sustainability/Quality (1)	1.00						
	Conviviality (2)	***.51***	1.00					
	Health (3)	***.69***	***.64***	1.00				
	Indulgence (4)	***.38***	***.65***	***.55***	1.00			
	Convenience (5)	***-.20***	***-.45***	***-.29***	.03	1.00		
	Price sensitivity (6)	.06	***.28***	***.18***	***.13***	***-.11***	1.00	
Attitudes	Att. organic	***.57***	***.17***	***.32***	.08	*-.07*	***-.13***	1.00
	Att. fair trade	***.45***	***.21***	***.24***	***.13***	***-.09***	*-.07*	1.00
	Att. low-budget	***-.12***	-.06	-.02	.07	***.11***	***.20***	1.00
	Att. fresh convenience	***-.18***	***-.29***	***-.19***	.07	***.59***	-.06	1.00
	Att. ready-to-eat	***-.26***	***-.35***	***-.30***	-.07	***.55***	.00	1.00
	Att. light	.01	.00	***.15***	.07	***.10***	***.09***	1.00
	Att. functional food	***.10***	.03	***.16***	***.11***	***.22***	.05	1.00
	Att. fruits & vegetables	***.31***	***.40***	***.46***	***.33***	***-.22***	***.13***	1.00
Purchase	P. organic	***.27***	-.01	***.17***	***-.11***	***-.12***	***-.15***	***.37***
	P. fair trade	***.24***	.02	***.12***	-.07	***-.08***	*-.06*	***.32***
	P. low-budget	***-.18***	-.03	***-.10***	.02	.04	***.20***	***.41***
	P. fresh convenience	-.06	***-.23***	***-.10***	-.01	***.23***	***-.10***	***.30***
	P. ready-to-eat	***-.08***	***-.20***	***-.12***	***-.11***	***.19***	-.03	***.15***
	P. light	-.03	-.07	***.11***	-.01	.03	.01	***.37***
	P. functional food	.04	-.03	***.12***	-.02	.03	-.05	***.16***
	P. fruits & vegetables	***.14***	***.18***	***.24***	.04	***-.19***	-.02	***.23***

Note. * Attitudes refer to category-specific attitudes (e.g., in the rows 'Att. organic' and 'P. organic' it refers to attitudes towards organic products). Models were run separately for each of the eight food product categories. All correlations printed in bold and italics are significant at .05 level, except for italics not bold: $p < .10$. Total $N = 851$.

Structural equation models and mediation analyses

We will first report the general pattern of findings across the different food categories and then turn to the specific food categories. Separate models were run for each of the food category-specific purchase behavior. Table 3 gives an overview of the goodness of fit coefficients of the different models. It is always the "adjusted partial-mediation" model that fits the data best and well. That is, for all kinds of food categories, some (but not all) values influenced attitudes and these in turn influenced consumer behavior. Additionally, some (but not all) values influenced consumer behavior directly.

Table 3. Goodness-of-fit statistics for the alternative value–attitude–behavior model structures.

Products	Model type *	χ^2	df	χ^2/df	CFI	RMSEA	AIC	ECVI
Organic	APM	146.27	58	2.52	.979	.042	240.27	.28
	PM	130.67	52	2.51	.981	.042	264.67	.31
	FM	175.30	58	3.02	.971	.049	297.30	.35
	DE	400.43	58	6.90	.916	.083	522.43	.62
Fair trade	APM	132.18	60	2.20	.982	.038	222.18	.26
	PM	123.41	52	2.37	.981	.040	257.41	.30
	FM	147.60	58	2.55	.977	.043	269.60	.32
	DE	267.26	58	4.61	.946	.065	389.26	.46
Low-budget	APM	131.90	58	2.27	.981	.039	225.92	.27
	PM	124.59	52	2.40	.981	.041	258.59	.30
	FM	154.05	58	2.66	.975	.044	276.05	.33
	DE	175.86	58	3.03	.970	.049	297.86	.35
Fresh con-venience	APM	139.90	62	2.26	.981	.038	225.90	.27
	PM	122.43	52	2.35	.982	.040	256.43	.30
	FM	139.45	58	2.40	.979	.041	261.45	.31
	DE	433.89	58	7.48	.905	.087	555.89	.65

Ready-to-eat	APM	113.41	59	1.92	.987	.033	205.41	.24
	PM	106.41	52	2.05	.986	.035	240.41	.28
	FM	129.04	58	2.23	.982	.038	251.04	.30
	DE	433.89	58	7.48	.905	.087	555.89	.65
Light	APM	120.55	58	2.08	.984	.036	214.55	.25
	PM	111.71	52	2.15	.985	.037	245.71	.29
	FM	124.56	58	2.15	.983	.037	246.56	.29
	DE	145.91	58	2.52	.978	.042	267.91	.32
Functional food	APM	107.82	60	1.80	.987	.031	197.82	.23
	PM	103.55	52	1.99	.985	.034	237.55	.28
	FM	117.14	58	2.02	.983	.035	239.14	.28
	DE	167.31	58	2.89	.969	.047	289.31	.34
Fruits & vegetables	APM	129.63	60	2.16	.980	.037	219.63	.26
	PM	113.56	52	2.18	.982	.037	247.56	.29
	FM	145.16	58	2.50	.975	.042	267.16	.31
	DE	260.97	58	4.50	.942	.064	382.97	.45

Note. * Model type: APM = Adjusted Partial-Mediation, PM = Partial-Mediation, FM = Full-Mediation, DE = Direct-Effects. Models were fitted separately for each of the eight food product categories. All models were estimated by maximum likelihood. Total N = 851; missing data deleted pairwise.

Determination coefficients of purchase behavior in the full value-attitude-behavior model fell into the range between .05 and .21. Keeping in mind that actual consumer behavior is predicted, these reliability coefficients can be perceived as practically significant. Compared to determination coefficients ranging from .02 to .17 in a model where attitudes solely predict

purchase behavior, this is a notable increment in variance explained by food-related values (see Table 4 for details).

Table 4. Increment in variance explained by food-related values in purchase behavior.

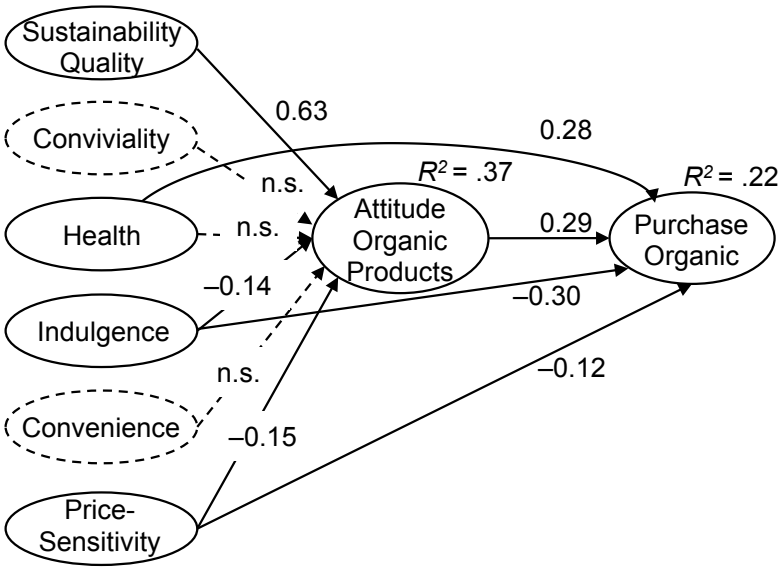
	Explained variance in purchase behavior	
Purchase of…	Attitude-behavior model	Value-attitude-behavior model
Organic products	.13	.22
Fair trade products	.10	.14
Low-budget products	.17	.20
Fresh convenience products	.09	.11
Ready-to-eat products	.02	.05
Light products	.14	.15
Functional foods	.03	.05
Fruits & vegetables	.05	.08

Reliability coefficients with respect to attitudes differed between .07 and .37, showing a large variability in the predictability of the different food category-related attitudes. For the attitudes, there was generally at least one value predicting it; however, the predictive value was not always the same. For none of the food categories we found complete mediation. Additionally, there was no common pattern of direct and indirect effects across the different food categories. All variables had direct effects for some food product categories and/or indirect effects for other food product categories. In the eight models of different food product categories, we found 11 fully mediated, 9 partially

mediated and 7 direct effects of values on purchase behavior, with a roughly even distribution of these different impacts throughout the different models.

Organic products. Organic food purchase can be predicted using attitudes and values as conceptualized in this study (R^2 = .22). Attitude towards organic products was more positive if sustainability/quality was valued, but it was lower if indulgence and price sensitivity were valued. Attitude can be explained by the interplay of these values to large degrees (R^2 = .37). The purchase behavior depended positively on the attitude towards organic products and the health value but negatively on indulgence and, although to a lesser degree, price sensitivity (see Figure 1a).

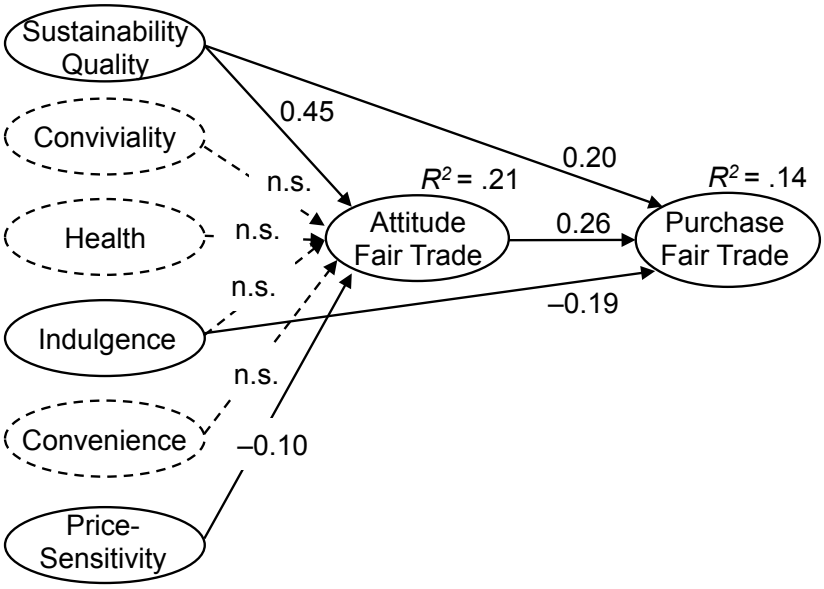
Figure 1a. Structural equation model for the values–attitude–behavior relation of organic products.



Note. All paths are standardized regression weights. Solid lines are significant at the level of $p < .05$. Dashed lines are non-significant paths.

Fair trade products. A similar but not identical pattern can be found in the model for fair trade products (Figure 1b). The food-related value of sustainability/quality had rather strong positive effects on attitude and purchase of fair trade products. Similarly, price sensitivity had a negative impact but was fully mediated by attitude, and indulgence had a negative direct effect on the purchase behavior itself. Purchase of fair trade foods could be predicted to some degree by food-related values and attitudes (R^2 = .14).

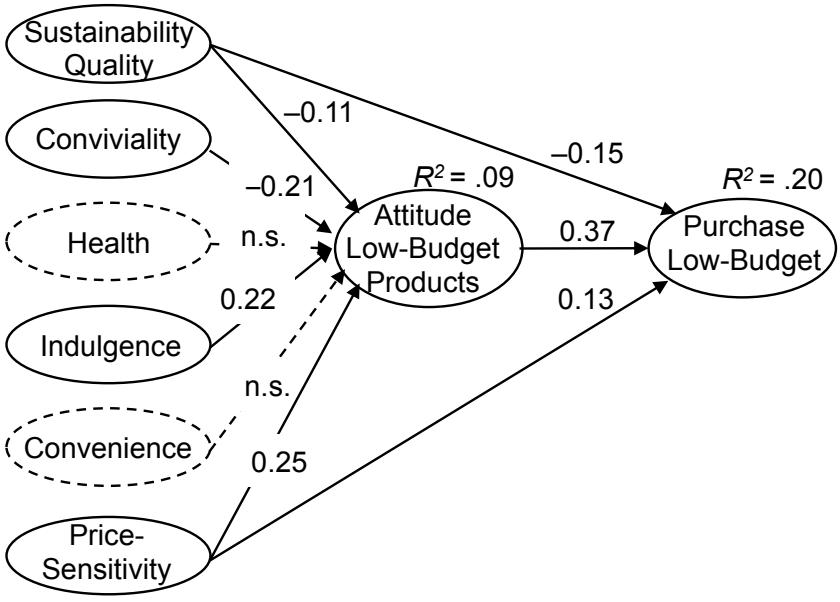
Figure 1b. Structural equation model for the values–attitude–behavior relation of fair trade products.



Note. All paths are standardized regression weights. Solid lines are significant at the level of $p < .05$. Dashed lines are non-significant paths.

Low-budget products. Quite an opposite pattern can be found looking at low-budget products (Figure 1c). Here, sustainability/quality had a negative impact on attitude and purchase of low-budget products – on the other hand, price sensitivity was the driving force positively influencing attitude and purchase behavior of low-budget products. Indulgence had a positive, conviviality a negative effect on attitudes. Taken together, the food-related values and attitudes explained the purchase behavior of low-budget products to quite some extent (R^2 = .20).

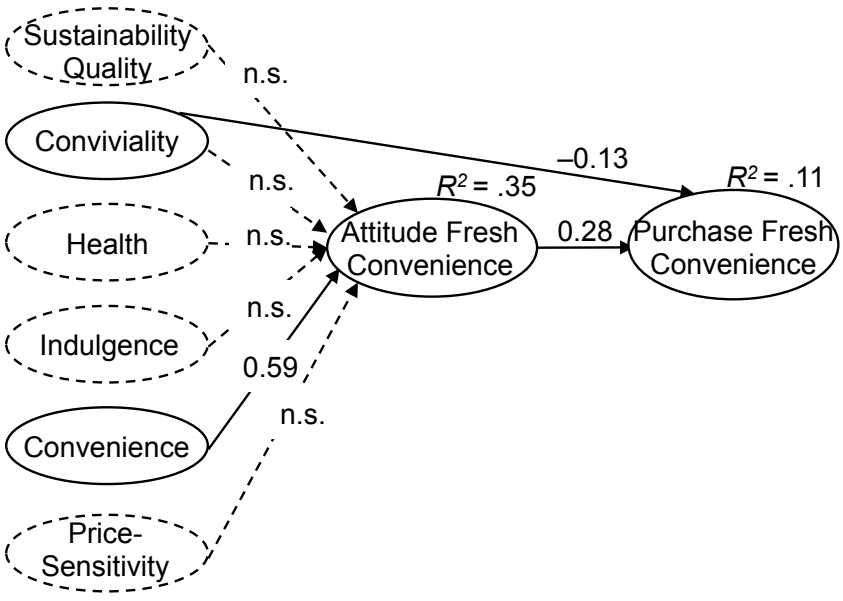
Figure 1c. Structural equation model for the values–attitude–behavior relation of low-budget products.



Note. All paths are standardized regression weights. Solid lines are significant at the level of $p < .05$. Dashed lines are non-significant paths.

Fresh convenience products. With regard to fresh convenience, only two food-related values actually had an impact on attitudes and purchase behavior (Figure 1d). The value of convenience was the main positive driver for purchase of fresh convenience foods – fully mediated through attitudes. Conviviality had a negative impact on purchase of fresh convenience foods. Attitude towards fresh convenience products could be explained quite exclusively through the value of convenience (R^2 = .35); purchase behavior could be predicted to a smaller degree (R^2 = .11).

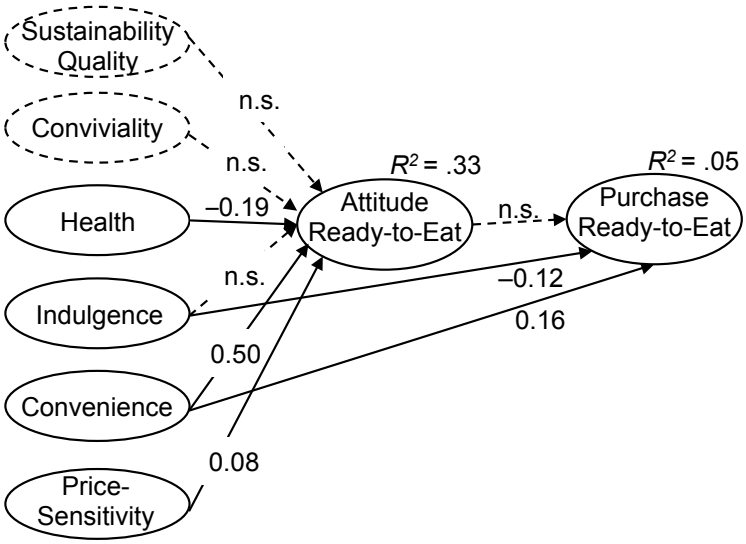
Figure 1d. Structural equation model for the values–attitude–behavior relation of fresh convenience products.



Note. All paths are standardized regression weights. Solid lines are significant at the level of $p < .05$. Dashed lines are non-significant paths.

Ready-to-eat products. A similar but still somewhat different pattern can be found in the model for non-perishable ready-to-eat products (Figure 1e). Again, convenience was a positive driver for both attitudes and purchase of ready-to-eat products. In contrast health had a negative impact on attitudes; also indulgence had a small negative effect on purchase. Price sensitivity had a small positive effect on the attitude towards ready-to-eat products – people who looked more for good prices tended to have more positive attitudes towards ready-to-eat products. This model is the only one where attitude did not have a significant impact on purchase behavior. Consequently, purchase behavior of ready-to-eat products could only be explained to a small degree (R^2 = .05).

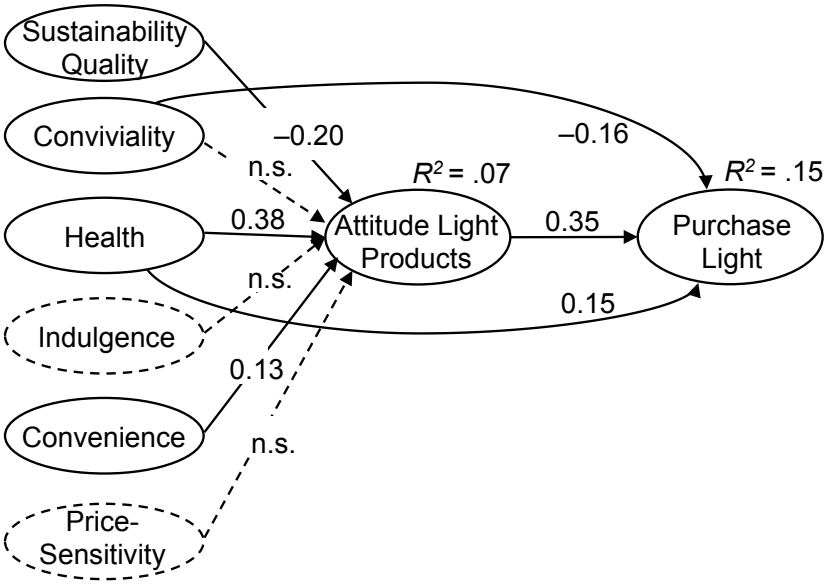
Figure 1e. Structural equation model for the values–attitude–behavior relation of ready-to-eat products.



Note. All paths are standardized regression weights. Solid lines are significant at the level of $p < .05$. Dashed lines are non-significant paths.

Light products. Attitudes towards light products were quite poorly explained by food-related values (R^2 = .07). After all, purchase behavior could be explained better (R^2 = .15) by food-related values and attitude (see Figure 1f). Health had the strongest effect on attitude, followed by a negative effect of sustainability/quality and a small positive effect of convenience. Health had also a smaller but direct effect on purchase of light products – conviviality, on the other hand, had a direct negative effect on purchase behavior only.

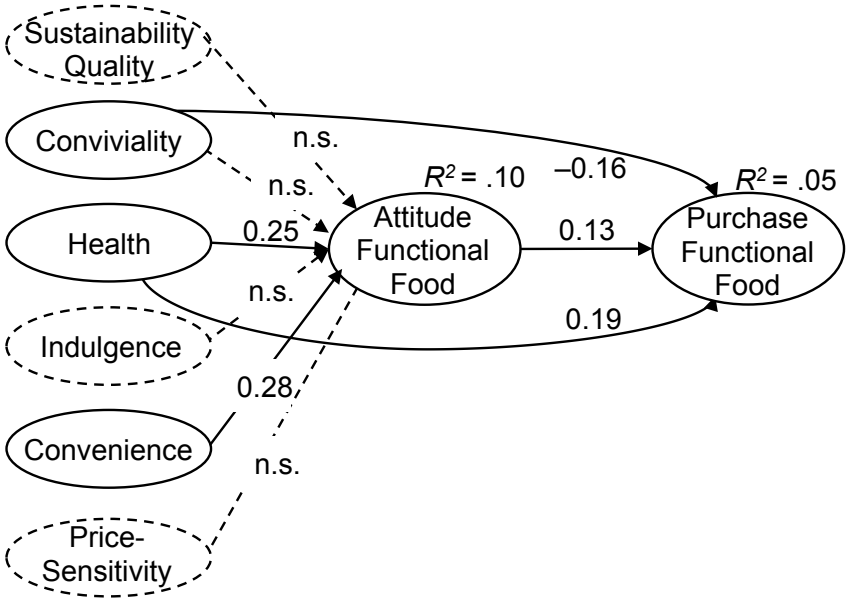
Figure 1e. Structural equation model for the values–attitude–behavior relation of light products.



Note. All paths are standardized regression weights. Solid lines are significant at the level of $p < .05$. Dashed lines are non-significant paths.

Functional food products. Quite a similar impact pattern to the one for light foods could be found for functional foods (Figure 1g). All paths had the same positive or negative sign, and effect sizes were comparable to the ones in the light foods model. Only sustainability/quality influenced neither attitude nor purchase of functional foods. Attitude was similarly little predicted by values (R^2 = .10) and purchase of functional foods even less (R^2 = .05).

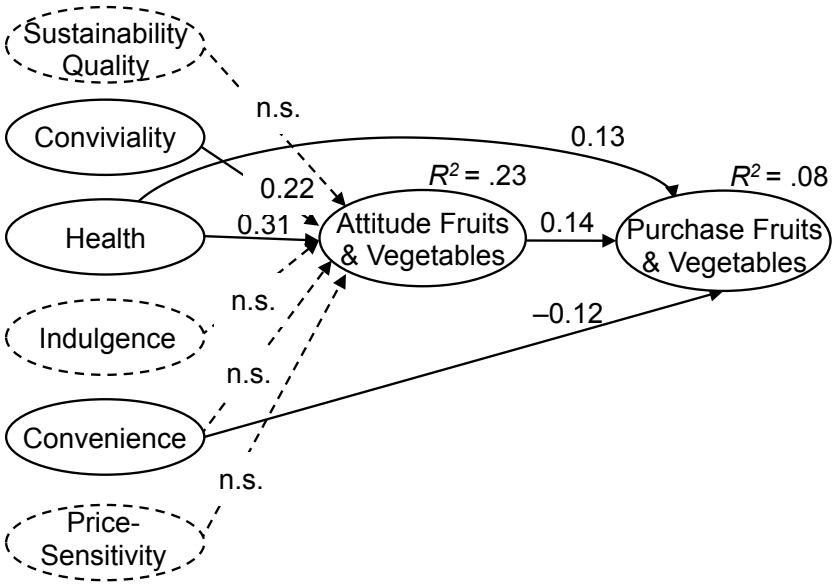
Figure 1f. Structural equation model for the values–attitude–behavior relation of functional food products.



Note. All paths are standardized regression weights. Solid lines are significant at the level of $p < .05$. Dashed lines are non-significant paths.

Fruits & vegetables. Attitudes towards fruits and vegetables were most strongly driven by the value of health, which also had a direct effect on the purchase of fruits and vegetables (Figure 1h). Conviviality, too, influenced attitudes positively. In contrast, convenience had a small negative direct impact on purchase behavior. Buying fruits and vegetables could be predicted only to a small degree by the modeled values and attitude (R^2 = .08).

Figure 1h. Structural equation model for the values–attitude–behavior relation of fruit and vegetables.



Note. All paths are standardized regression weights. Solid lines are significant at the level of $p < .05$. Dashed lines are non-significant paths.

Summing up, the structural relation patterns of food-related values, attitudes, and behavior share similarities and are still unique to each food product category. Related food product categories (light products and functional foods, for example) share similar patterns; unlike product categories (e.g., organic versus low-budget products) show opposite patterns.

Discussion

The purpose of this study was to investigate the structural relations in the food-related values–attitudes–behavior chain. Contrary to previous findings (e.g., Homer & Kahle, 1988), we found only partial (and not full) mediation of values through attitudes. On the one hand, we replicated the hierarchical structure of the values–attitudes–behavior chain by showing that food-related values have a strong and significant impact on attitudes, and attitudes, in turn, influence actual purchase behavior. This goes along with the finding that the direct-effects only model (where food-related values and attitudes are on the same hierarchical level and both influence behavior directly) fitted the observed data the least. This implies that the emphasis on personal values in the food choice process model (Connors et al., 2001) does not account sufficiently for the apparently important mediation role of attitudes.

On the other hand, the full-mediation model (based on the theory of planned behavior) fitted the data only second best; clearly, the best solution was the partial-mediation model. Thus, attitudes are not strict mediators of food-related values; instead, only some food-related values are fully mediated, whereas others are partially mediated, and still others have exclusively direct

effects on purchase behavior (non-mediated). These findings question central assumptions of the theory of planned behavior (Ajzen, 1991; 2005). First, because the theory states that all variables preceding attitude (such as values, knowledge, personality traits, sociodemographic characteristics, etc.) should be fully mediated by attitudes. Second, even though we did not measure the complete theory of planned behavior (with social norms, perceived behavioral control, and intention), our findings question the completeness of the theory: Values seem to be one element that has additional explanatory power (after attitude has been taken into account) with regard to purchasing different foodstuffs.

The well-fitting partial-mediation model corresponds most with the reflective-impulsive model (Strack et al., 2006), which assumes both reflective and impulsive decisions and actions in food choice simultaneously. Human beings certainly have the unique ability for planned behavior, but they also act habitually and impulsively on various occasions. Impulsive actions (driven for example by a value of indulgence and triggered by a certain situation such as a piece of cake) can undermine deliberate behavior by overruling self-control and long-term goals like healthy eating. And the more habitual a behavior is, the less controlled it becomes and the more impulsive precursors can predict it (Hofmann, Friese, & Strack, 2009; Hofmann, Friese, & Wiers, 2008).

Eating and food choice become highly routine and habitual precisely because they are everyday activities – food consumption patterns and eating contexts get repeated (Jastran, Bisogni, Sobal, Blake, & Devine, 2009). As a consequence, (food) habits lack cognitive awareness and require little mental

effort. In the case of buying conventional versus organic milk, it has been shown for example, that organic shoppers chose as effortless and time-efficiently as the conventional shoppers – implying the use of simple heuristics in the choice process (Thøgersen, Jørgensen, & Sandager, 2012). This study suggests that values may operate similarly, at least in part, to a habitual decision process (Verplanken & Aarts, 1999). That is, food-related values do not always influence behavior via the more cognitively endorsed attitudes but can have direct impact on behavior.

One explanation for this finding is that values can be regarded as "cultural truisms – that is, beliefs that are widely shared and rarely questioned" (Maio & Olson, 1998, p. 294). In general, people agree with truisms and, at the same time, lack cognitive support for them. Maio and Olson (1998; see also Maio, 2010) do not doubt the central role of values in people's lives and decisions but question the psychological basis of values and suggest that values are supported primarily by affective information. It could therefore be that the food-related values function similarly to truisms and, thus, influence food purchase behavior also effortlessly, with little or no conscious awareness (Rohan, 2000). So, possibly people are mentally unaware of this process – much in the same way that they are unaware of the way habits work.

This study also revealed that the "adjusted partial-mediation" model showed the best fit to the data. Impact patterns differ depending on the particular food product category: There is no 'one model fits all.' Taking this into account, it is possible to compare the different impact patterns of food-related values on attitudes and purchase behavior across the range of eight

different food product categories. Structural relation models shared several similarities between different food product categories. Related foods (such as organic and fair trade; light and functional; ready-to-eat and fresh convenience) showed similar patterns; unlike foods (such as organic/fair trade versus low-budget; ready-to-eat versus fruits/vegetables) showed opposite patterns.

Food-related values explained variance in the attitudes towards food product categories to quite different degrees – more than one-third of the variance could be explained in attitudes towards organic, fresh convenience, and ready-to-eat foods. Others, such as attitudes towards light, low-budget, and functional foods could be explained to a smaller degree. Similarly, food-related values and attitudes could only explain one-fifth or less of the variance in the purchase of different foods – with some explaining more (in the case of organic and low-budget foods) and some less (in the case of fruits and vegetables, ready-to-eat, and functional foods).

It was also instructive to look at the non-significant paths. Price sensitivity, for example, had no influence on attitude and purchase of fresh convenience, light, functional foods and fruits and vegetables. Also, we were surprised to find that conviviality did not influence attitudes (although there is a significant correlation between these constructs) and purchase of organic and fair trade foods, even though this value was strongly associated with these products in earlier findings (Hauser et al., 2011; Lüdi & Hauser, 2010). This could be explained by the fact that the food-related values themselves were quite strongly correlated (as can be seen in Table 2); hence, the bivariate

correlation between conviviality and attitudes might be spurious for these food categories.

The findings of this study have implications for health prevention programs, environmental protection actions, marketing, and strategic alignment of food products. We will discuss the latter two, beginning with possible conclusions for marketers. Since food-related values are predictors of consumption behavior, promotional strategies designed to create and reinforce a preference by invoking these values will most probably be effective (Vinson et al., 1977). Furthermore, because food-related values might function like truisms, promotional messages could back the food-related values by providing cognitive support, which might strengthen the values and make them more resistant (Maio & Olson, 1998).

For instance, if marketers want to boost sales of organic foods, they could foster the value of high-quality, transparent, and sustainable food production by providing arguments in favor of this practice, which, at the same time, should counter the negative influence of the value price sensitivity. As the adjusted models showed that the purchase of related food categories (such as organic and fair trade products or light and functional foods) can be explained by the same core values, marketers could save costs and resources by concentrating several related food product categories into one communication campaign and focus on the same core values (the ones with the highest impact on related food category purchases).

Regarding the strategic alignment of food products, observing and measuring value orientations and emerging value trends is crucial, because it

makes possible the identification of new product opportunities and the repositioning of existing products. Although values are generally viewed as stable during adulthood, there can be changes as a result of adapting to new life situations or as a simple function of age (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009). Changing importance of food-related values may result in the need for new products, adjustment of product ranges, and development and enhancement of goods and services.

What are the limitations of this study? The food purchase measure that we used in this study is presumably not of perfect validity. First, it measured past behavior over the period of one year which served as a proxy for future behavior. Second, it measured consumption in one grocery chain, with most consumers buying more than half their overall foods in this chain, but this still leaves room for food purchases at other places (such as farmers markets, specialty stores, and so on) – a variable we could not control for. Hence, future research should try to replicate these findings using different measures such as eating diaries.

Even though the adjusted partial-mediation model fitted the data best and corresponds with a top-down route, with values influencing attitudes and finally translated into action (Brunsø et al., 2004); only experiments could prove the causal influence of values on behavior (e.g., Maio & Olson, 1995). Theoretically, a bottom-up route (in the sense of a categorization process) is also possible and logical (Rohan, 2000), and we assume that there are most certainly reciprocal influences between values, attitudes, and behavior.

The findings of this study can be generalized only to different degrees. As values are universal (Schwartz, 1992), the functioning of the value–attitude–behavior chain and partial mediation of values through attitudes might be generalized to a broader population (such as Switzerland, Europe, or other post-industrial countries). But the mere existence of the same food-related values themselves, as well as their interplay, is quite probably culturally dependent and cannot be generalized to other countries (Davidov, Schmidt, & Schwartz, 2008; Rozin, 2006; Saba, 2001). Future research in different countries would need to first identify the most salient food-related values and then investigate the causal relations.

In conclusion, this study helped us to appraise the significance of values predicting the purchase of different foodstuffs and to comprehend how much and in what way food-related values influence actual behavior. Attitudes mediate this relation only partially, which emphasizes the values' impact on behavior. Of course, every consumer and every food purchase situation is unique and influenced by a variety of other factors, but on an aggregated level, we believe that food-related values are important constructs for understanding consumer attitudes and behavior and will help to shape future product developments by food companies.

References

Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: a review. *British Food Journal, 11*(10), 1140-1167.

Ajzen, J. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211.

Ajzen, I. (2005). *Attitudes, personality, and behavior* (2nd ed.). Milton-Keynes, England: Open University Press / McGraw-Hill.

Allport, G. W., Vernon, P. E., & Lindzey, G. (1960). *Study of Values. Manual and Test Booklet.* Boston, MA: Houghton Mifflin.

Arbuckle, J. L. (2010). *IBM SPSS Amos 19 user's guide*. Chicago, IL: SPSS.

Arvola, A., M. Vassallo, Dean, M., Lampila, P., Saba, A. Lähteenmäki, L., & Shepherd, R. (2008). Predicting intentions to purchase organic food: The role of affective and moral attitudes in the theory of planned behaviour. *Appetite, 50*(2-3), 443-454.

Baker, S., Thompson, K. E., Engelken, J., & Huntley, K. (2004). Mapping the values driving organic food choice: Germany vs the UK. *European Journal of Marketing, 38*(8), 995-1012.

Bardi, A., Lee, J. A., Hofmann-Towfigh, N., & Soutar, G. (2009). The structure of intraindividual value change. *Journal of Personality and Social Psychology, 97*(5), 913-929.

Brunsø, K., Grunert, K. G., & Bredahl L. (1996). An analysis of national and crossnational consumer segments using the food-related lifestyle instrument in Denmark, France, Germany and the United Kingdom,

MAPP Working Paper No. 36. Aarhus, Denmark: The Aarhus School of Business.

Brunsø, K., Scholderer, J., & Grunert, K. G. (2004). Closing the gap between values and behavior: A means-end theory of lifestyle. *Journal of Business Research, 57*(6), 665-670.

Byrne, B. M. (2010). *Structural equation modeling with AMOS* (2nd ed.). New York, NY: Routledge.

Conner, M., Povey, R., Sparks, P., James, R., & Shepherd, R. (2003). Moderating role of attitudinal ambivalence within the theory of planned behaviour. *British Journal of Social Psychology, 42*(1), 75-94.

Connors, M. M., Bisogni, C. A., Sobal, J., & Devine, C. (2001). Managing values in personal food systems. *Appetite, 36*(3), 189-200.

Davidov, E., Schmidt, P., & Schwartz, S. H. (2008). Bringing values back in: The adequacy of the European social survey to measure values in 20 countries. *Public Opinion Quarterly, 72*(3), 420-445.

Feather, N. T. (1995). Values, valences, and choice: The influence of values on the perceived attractiveness and choice of alternatives. *Journal of Personality and Social Psychology, 68*(6), 1135-1151.

Finney, S. J., & DiStefano, C. (2006). Nonnormal and categorical data in structural equation models. In G. R. Hancock & R. O. Mueller (Eds.), *A second course in structural equation modeling* (pp. 269-314). Greenwich, CT: Information Age.

Goldsmith, R. E., Freiden, J., & Henderson, K. V. (1997). The impact of social values on food-related attitudes. *British Food Journal, 99*(9), 352-357.

Guido, G., Prete, M. I., Peluso, A. M., Maloumby-Baka, R. C., & Buffa, C. (2010). The role of ethics and product personality in the intention to purchase organic food products: A structural equation modeling approach. *International Review of Economics, 57*(1), 79-102.

Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing, 46*(2), 60-72.

Grunert, K. G. (2010). Means-end chains: A means to which end? *Marketing*, 6(1), 30-38.

Grunert, K. G., Brunsø, K., Bredahl, L., & Bech, A.C. (2001). Food-related lifestyle: A segmentation approach to European food consumers. In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society: A European perspective of consumers' food choices* (pp. 211-229). Berlin-Heidelberg, Germany: Springer.

Hauser, M., Jonas, K., & Riemann, R. (2011). Measuring salient food attitudes and food-related values: An elaborated, conflicting and interdependent system. *Appetite, 57*(2), 329-338.

Hofmann, W., Friese, M., & Strack, F. (2009). Impulse and self-control from a dual-systems perspective. *Perspectives on Psychological Science, 4*(2) 162-176.

Hofmann, W., Friese, M., & Wiers, R. W. (2008). Impulsive versus reflective influences on health behavior: A theoretical framework and empirical review. *Health Psychology Review, 2*(2), 111-137.

Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology, 54*(4), 638-646.

Honkanen, P., Verplanken, B., & Olsen, S. O. (2006). Ethical values and motives driving organic food choice. *Journal of Consumer Behaviour, 5*(5), 420-430.

Iacobucci, D. (2010). Structural equations modeling: Fit indices, sample size, and advanced topics. *Journal of Consumer Psychology, 20*(1), 90-98.

Jastran, M. M., Bisogni, C. A., Sobal, J., Blake, C., & Devine, C. M. (2009). Eating routines: Embedded, value based, modifiable, and reflective. *Appetite, 52*(1), 127-136.

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9*(2), 151-173.

Lüdi, N., & Hauser, M. (2010). Consumer value monitor. GDI study No. 35. Rüschlikon, Switzerland: Gottlieb Duttweiler Institute.

Magnusson, M. K., Arvola, A., Koivisto Hursti, U.-K., Åberg, L., & Sjödén, P.-O. (2003). Choice of organic foods is related to perceived consequences for human health and to environmentally friendly behaviour. *Appetite, 40*(2), 109-117.

Maio, G. R. (2010). Mental representations of social values. In M. P. Zanna (Ed.), *Advances in experimental social psychology, Volume 42* (pp. 1-43). Burlington, MA: Academic Press.

Maio, G. R., & Olson, J. M. (1995). Relations between values, attitudes, and behavioral intentions: The moderating role of attitude function. *Journal of Experimental Social Psychology, 31*, 266-285.

Maio, G. R., & Olson, J. M. (1998). Values as truisms: Evidence and implications. *Journal of Personality and Social Psychology, 74*(2), 294-311.

Maio, G. R., Olson, J. M., Bernard, M. M., & Luke, M. A. (2003). Ideologies, values, attitudes, and behavior. In J. Delamater (Ed.), *Handbook of social psychology* (pp. 283-308). New York, NY: Kluwer Academic/Plenum Publishers.

Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers of overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11*(3), 320-341.

Ouellette, J. A., & Wood, W. (1998). Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior. *Psychological Bulletin*, *124* (1), 54-74.

Rohan, M. J. (2000). A rose by any name? The value construct. *Personality and Social Psychology Review, 4*(3), 255-277.

Rokeach, M. (1973). *The nature of human values.* New York, NY: Free Press.

Rozin, P. (2006). The integration of biological, social, cultural and psychological influences on food choice. In R. Shepherd & M. Maats (Eds.), *The psychology of food choice* (pp. 19-40). Oxfordshire, England: CABI.

Saba, A. (2001). Cross-cultural differences in food choice. . In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society. A European perspective of consumers' food choices* (pp. 233-246). Berlin/Heidelberg, Germany: Springer.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online, 8*(2), 23-74.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology, Vol. 25* (pp. 1-65). New York, NY: Academic Press.

Strack, F., Werth, L., & Deutsch, R. (2006). Reflective and impulsive determinants of consumer behavior. *Journal of Consumer Psychology, 16*(3), 205-216.

Swiss Federal Statistical Office (2010). *Statistisches Jahrbuch der Schweiz 2010* [Statistical yearbook of Switzerland 2010]. Zurich, Switzerland: NZZ Libro.

Tanner, C., & Wölfing Kast, S. (2003). Promoting sustainable consumption: Determinants of green purchases of Swiss consumers. *Psychology & Marketing, 20(10),* 883-902.

Tarkiainen, A. & Sundqvist, S. (2009). Product involvement in organic food consumption: Does ideology meet practice? *Psychology & Marketing, 26(9),* 844-863.

Thøgersen, J., Jørgensen, A-K., & Sandager, S. (2012). Consumer decision making regarding a „green“ everyday product. *Psychology & Marketing, 29(4),* 187-197.

Verplanken, B., & Aarts, H. (1999). Habit, attitude, and planned behaviour: Is habit an empty construct or an interesting case of goal-directed automaticity? *European Review of Social Psychology, 10*(1), 101-134.

Verplanken, B., & Holland, R. W. (2002). Motivated decision making: Effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology, 82*(3), 434-447.

Vinson, D. E., Scott, J. E., & Lamont, L. M. (1977). The role of personal values in marketing and consumer behavior. *Journal of Marketing, 41*(2), 44-50.

Footnotes

1. Migros-Genossenschafts-Bund (MGB), press release, December 2010.
2. Migros has a food market share of 27.3% in Switzerland (Migros Annual Report 2010; available at http://m10.migros.ch).
3. The full questionnaire in German or French can be obtained from the corresponding author.

4

General Discussion

In this concluding chapter, I provide an aggregation of the main results of this research, a discussion of the findings, and an overview of the strengths of the two studies conducted. I also mention possible limitations and make recommendations for future research in the area of values and food choice decisions. Practical implications and an overall final conclusion wind up the chapter.

Summary of the Main Results

The aim of the studies conducted was twofold: First, I found it essential to contribute to a deeper understanding of the antecedents of food choice decisions and their interplay with different eating situations and food products. Second, I was interested in examining the underlying mechanisms of the food-related value–attitude–behavior chain, that is, the impact of food-related values on actual purchase behavior and their potentially additional explanatory power over and above the role of attitudes.

Study 1 revealed personal meanings and patterns of everyday food choices across different situations by using a qualitative approach in the form of the repertory grid technique (Chapter 2). The analysis and clustering of the elicited personal constructs disclosed elaborated values systems that hold positively and negatively evaluated values simultaneously. The most significant positively evaluated food-related values can be summarized as: authenticity/naturalness, conviviality, health, quality/indulgence, convenience, and price. As expected, the salience of these values – and their negatively

evaluated counterparts – differed for various social eating situations and food product categories. Consumers perceived several eating situations (such as eating alone, eating at work, etc.) as limiting the potential to eat in accordance with their personal values – consumers discerned a gap between their personal ideals of eating, their everyday lives, and concrete eating situations. This finding is corroborated by the result that consumers' personal values also differed significantly from their perception of the current eating culture. Thus, in everyday food choices, interdependent food-related values compete and are a possible cause of ambivalence and conflicts. In short, this study identified a crucial dilemma of today's consumers: Their personal values concerning food and eating differ significantly from their perceived food culture of today.

Study 2, a survey-based study with a roughly representative sample of the Swiss population (Chapter 3), analyzed the exact mechanisms of the food-related value–attitude–behavior chain. The newly created measurement was based on the salient food-related values uncovered in study 1, and this data was complemented with actual consumption behavior. This second study confirmed a hierarchical organization of the value–attitude–behavior chain: Food-related values influenced attitudes, and these, in turn, impacted behavior. However, contrary to previous findings, we found values to be only partially mediated by attitudes. This means that some food-related values were fully mediated, whereas others were partially mediated, and still others had exclusively direct effects on purchase behavior. The direct effects of food-related values on food purchase hints at corroboration for the hypothesis that food-related values have additional explanatory power with regard to food purchase. In fact, whereas

attitudes explained from 3% to 17% of the food purchase behavior (depending on the food product category), adding values to the model improved the prediction of the purchase behavior by 1 to 9 percentage points (explaining between 5% and 22% of the food purchase behavior).

Further, the analysis also revealed that the partial-mediation model adjusted to every food product category showed the best fit to the data. The particular influences of food-related values differed depending on the particular food product. Comparisons of the various impact patterns across the eight different food product categories showed similarities and differences: Related foods (such as organic and fair trade) showed similar patterns – unlike foods (such as organic/fair trade versus low-budget) showed opposite patterns. In summary, study 2 emphasized that food-related values are important constructs to understand and predict food choices over and above the role of attitudes.

General Discussion of the Findings

The most important general finding of this dissertation project is understanding and prediction of food choice decisions. Food-related values realistically help us to understand what is personally important to people when they make their food choices in very diverse contexts and eating situations. Moreover, the findings of this project show that actual food consumption can be predicted by food-related values to quite some degree.

The results are in line with a number of recent studies demonstrating the role of values in consumer behavior – particularly, the increasing

importance of ethical and moral components in food choice (Aertsens, Verbeke, Mondelaers, & Van Huylenbroeck, 2009; Arvola et al., 2008; Guido, Prete, Peluso, Maloumby-Baka, & Buffa, 2010). According to these findings, consumers are no longer considering only price and quality when they choose and buy food but are also bearing in mind ethical criteria, such as sustainable production processes. This is also mirrored in the expanding market of organic food products, which is predominantly explained by consumers' growing interest in personal health and by ethical values and motives, such as environmental protection, animal welfare, and fair trade (Honkanen, Verplanken, & Olsen, 2006; Magnusson, Arvola, Koivisto Hursti, Åberg, & Sjödén, 2003). In addition, the uncovering of the salient food-related values also indicated consumers' desire to take time for preparing food and eating, confirming that conviviality is a central aspect in the European eating culture (Fischler & Masson, 2008). With regard to eating, conviviality refers to the act of sociability, sharing, and maintenance of relationships when eating.

The qualitative study not only revealed salient food-related values but also an explanation of why people often cannot live up to all of them at the same time or in a certain situation. Consumers perceive a gap between their personal ideal of eating, their everyday life, and concrete eating situations. This mirrors a central finding of the food choice process model by Connors, Bisogni, Sobal, and Devine (2001): Consumers have diverse values, and they use strategies to balance competing values. However, our findings additionally identified situational constraints that provide an explanation of the intention-behavior gap (Gollwitzer & Sheeran, 2006): Consumers perceive various

eating situations (e.g., eating alone, take-away food, etc.) as limiting the potential for them to eat according their personal values. This suggests that time and range of choice is a crucial variable influencing the possibility to fulfill food-related values – which was previously shown by Tanner and Wölfing Kast (2003).

Notwithstanding, study 2 shows that on an aggregated level, food-related values do influence actual purchase behavior. This is in line with (social) psychological theories: Values influence attitudes, and these, in turn, impact behaviors (Allport, Vernon, & Lindzey, 1960; Feather, 1995; Maio, Olson, Bernard, & Luke, 2003; Rohan, 2000; Rokeach, 1973). This hierarchical structure of the values–attitudes–behavior chain was replicated – by demonstrating that the direct-effects model (where food-related values and attitudes were on the same hierarchical level and both influence behavior directly) fit the observed data poorly.

Contrary to previous findings (e.g., Homer & Kahle, 1988), however, we found only partial (and not full) mediation of values through attitudes. Thus, attitudes are not strict mediators of food-related values; instead, only some food-related values are fully mediated, whereas others are partially mediated, and still others have exclusively direct effects on purchase behavior (non-mediated). These findings question central assumptions of the theory of planned behavior (Ajzen, 1991, 2005): first, because the theory states that values (as well as all other variables preceding attitudes) should be fully mediated by attitudes, and second, because values have additional explanatory power with regard to purchasing various foodstuffs.

The model that fit the observed data best was the partial-mediation model. The underlying mechanisms correspond best with the reflective-impulsive model (Strack, Werth, & Deutsch, 2006). According to this theory, reflective and impulsive decisions and actions influence food choice simultaneously: Most consumption situations include both rule-based reasoning and automatic information processing at the same time. That is, people have the unique ability for planned behavior, but they also act habitually and impulsively on various occasions. And the more habitual a behavior is (which is a central characteristic of food purchase; e.g., Jastran, Bisogni, Sobal, Blake, & Devine, 2009), the less controlled it becomes and the more that impulsive precursors can predict it (Hofmann, Friese, & Strack, 2009; Hofmann, Friese, & Wiers, 2008).

The finding that food-related values do not always influence behavior via the more cognitively endorsed attitudes but can have direct impact on behavior suggests that values may operate similarly, at least in part, to a habitual decision process (Verplanken & Aarts, 1999, p. 111): "When strong habits have developed, intentions may lose their predictive power. (…) Thus, when strong habits are present, processes that, implicitly or explicitly, are assumed to take place according to rational choice models, occur less, or less extensively." That is, habits can have a stronger influence on behavior than actual attitudes toward a certain behavior or behavioral intention have. Only when a habit is weak is behavioral intention related significantly with actual behavior, which Verplanken, Aarts, van Knippenberg, and Moonen (1998) demonstrated in the case of car use versus use of public transport. The same

mechanism could apply to the role of values in consumer behavior: When values are strong, then they might overrule attitudes.

The direct influence of food-related values on behavior, omitting the more cognitively endorsed attitudes, could also be explained by viewing values as cultural truisms – that is, "values may be widely shared, rarely questioned, and, therefore, bereft of cognitive support" (Maio & Olson, 1998, p. 294). Values are believed to be primarily supported by affective rather than cognitive information. So people may have little or no conscious awareness of the process by which values influence their behavior (Rohan, 2000), much in the same way that they are unaware of the way that habits work. Verplanken and Holland (2002, p. 444) even suggested that "central values might therefore in some cases manifest themselves as general habits. (…) a person may develop a general habit that expresses an overall motivation, in this case a central value, and that is enacted in a variety of situations." This is explained through the assumption that people apply central values (such as environmental protection) repeatedly in various situations (such as when they habitually buy organic, local, and seasonal foodstuffs), which is a prerequisite of forming a habit.

The gap between personal ideals and the current eating culture revealed in study 1 could also be explained by eating routines that counteract food-related values. According to Verplanken and Aarts (1999, p. 114) "counterintentional habits often involve short-term hedonistic motives at the expense of long-term benefits of attaining valued goals." For example, people may overall value consuming sustainable or healthy foodstuffs but fail to buy these products in a concrete situation due to their counterintentional eating

habits (such as eating convenience or fatty foods). Generally, habits are difficult to change, because we are not aware of them at the time of action. Creating new habits requires time and repetition of the new behavior, and a favorable environment is most certainly advantageous. This aspect will be discussed further in the section 'Implications' below.

Strengths

This dissertation project replicates previous findings on food choice decision by uncovering an elaborated and interrelated system of food-related values that is much the way that we expected it to be. Further, study 1 provides additional insights on the structure and connections of salient food-related attitudes and values as well as on how highly elaborated these concepts are. The qualitative approach leads to rich data: The discrimination task results in structured data, and results can thus be analyzed on different levels of abstraction. In fact, for each of the elements inquired about (such as certain food products, food brands, shopping locations) it is possible to elaborate an exact profile on the food-related attitudes or values generated. This makes possible a detailed strength and weakness analysis, which is of high practical relevance for food suppliers wanting to understand how consumers view their products and services in order to improve their offer.

Moreover, we also assumed that food-related values impact actual food purchase behavior, but we were not sure about the exact underlying mechanisms. To my knowledge, this is one of the rare studies that, first, is

based on real consumption behavior, and second, tests four theoretically derived but competing value–attitude–behavior models against one another. Additionally, we tested these models not only with regard to one food product (as has been done frequently in the case of organic or fair trade products) but also across a variety of eight, quite diverse food products (ranging from organic to ready-to-eat foodstuffs). Ultimately, we had the opportunity to use a large, roughly representative sample of Swiss consumers, which contributes to the external validity and generalizability of the findings (with regard to the population of Switzerland).

The testing of the different value–attitude–behavior models against one another revealed that behavior is influenced in some predictable ways, especially regarding the hierarchy of the value–attitude–behavior chain. However, contrary to previous findings, food-related attitudes were only partially mediated by attitudes and also showed direct effects on behavior. Study 2 thus confirms the influence of domain-specific values on attitudes and behavior and specifies their relationships – namely, that they are only partially mediated by attitudes. This has important consequences for theoreticians and practitioners alike (see section 'Implications' below). Further, the findings also demonstrate that food-related values not only matter with regard to foods linked to ethical beliefs (such as organic or fair trade products) but also with regard to 'regular' and low-involvement products (such as low-price, convenience, and ready-to-eat foods). Essentially, structural relation models shared several similarities between different food product categories. Related foods (such as ready-to-eat and fresh convenience) showed similar impact

patterns; unlike foods (such as ready-to-eat versus fruits/vegetables) showed opposite patterns.

Overall, with the two studies conducted we can contribute to a more comprehensive view of the role and impact of domain-specific values with regard to food choice process and consumption behavior.

Limitations

Some aspects of the two studies conducted deserve comment. First, the results apply most directly to the Swiss sample – the uncovered salient food-related attitudes and values cannot be generalized to other countries without further qualifications. The mere existence of the same food-related values as well as their interplay is quite probably culturally dependent (Davidov, Schmidt, & Schwartz, 2008; Rozin, 2006; Saba, 2001). On the other hand, as values are universal (Schwartz, 1992, 2012), the functioning of the value–attitude–behavior chain, and partial mediation of values through attitudes, might be generalized to a broader population (such as Switzerland, Europe, or other post-industrial countries).

Second, study 1 was based on a relatively small sample size, which only allows presentation of the aggregated consumer perspective. Further sub-analysis of salient food-related values and their interplay with various situations among different groups of consumers is not possible. The subsequent large sample in study 2 and the corroborating findings of the food-related values through confirmatory factor analysis relativize this weakness.

Third, the food purchase measure that we used in study 2 is presumably not of perfect validity: It measured past behavior over the period of one year, which served as a proxy for future behavior. And it measured consumption in one grocery store chain, which leaves room for food purchases elsewhere (such as farmers' markets, specialty stores, and so on) – a variable we could not control for.

Fourth, we found that the adjusted partial-mediation model fit the data best, which corresponds with a top-down route, with values influencing attitudes and finally translated into action (Brunsø, Scholderer, & Grunert, 2004). Theoretically, a bottom-up route (in the sense of actual purchase behavior influencing concrete product-specific attitudes, which in turn shape the more abstract food-related values) is also possible and logical (Rohan, 2000), and we assume that there are most certainly reciprocal influences between values, attitudes, and behavior.

Future Research

The previous section on potential shortcomings points to various research possibilities. For example, future studies could identify salient food-related attitudes and values and their interdependence in countries other than Switzerland and the United States. If a set of inquired elements is held constant across various cultural groups, the resulting repertory grids can be put into direct quantitative relation (Kruse, Dittler, & Schomburg, 2007). Cross-cultural comparisons of different patterns of food-related values and their interplay with

different situations and food products could reveal common product development and marketing potential.

In addition, a larger sample would allow sub-analysis of the aggregated consumer perspective. In fact, further analysis in study 1 (not reported here) suggested there may be quite a large variance in the positioning of the element 'what is important to me personally.' Thus, it is possible that various groups of consumers or even individual consumers actually think differently and evaluate buying, preparing, and eating food differently. Future research could focus on what values are how important to what individuals (e.g., with respect to sociodemographic variables such as gender, age, family status, socioeconomic status, etc.). This is especially true regarding the impact of food-related values on actual purchase behavior. There are most certainly cross-cultural differences in the structural relation models of the value–attitude–behavior chains as well as intra-cultural variances (depending on sociodemographic variables). It would be interesting to find out whether food-related values vary more within one cultural group or across cultures. For example, possibly, parents with young children generally pay more attention to organic and sustainably produced foodstuffs regardless of their cultural provenance, whereas it is similarly plausible to assume that countries with a bigger share in organic products (such as Denmark, Austria, and Switzerland[3]) might generally demonstrate a different pattern than countries with a lower market share in organic products. For example, different structural relations between subjective norms, moral norms, and the intention to purchase organic foods have been

[3] Source: www.fibl.org/en/themen/themen-statistiken.html

found for French (where there is a higher level of ethical consumerism) versus Italian consumers (Guido et al., 2010).

Another issue that requires further investigation is the route by which food-related values influence actual purchase behavior. As mentioned above, both a top-down and a bottom-up route are theoretically plausible (Rohan, 2000), and only experiments can prove the causal influence of values on behavior (e.g., Maio & Olson, 1995; Verplanken & Holland, 2002).

Finally, the way we measured food purchase likewise calls for replication. Even though the loyalty cards of this specific retail grocery chain are highly popular with Swiss consumers, and the respondents purchased on average more than 50% of their overall foods at this retailer, we could not control for food purchased at other places. Food purchase and eating diaries could be an expedient measure for future research on food-related values and consumption. There is also an exciting new research field evolving that uses personal mobile phones to track behavior in real time (e.g., Kuntsche & Labhart, 2012). The technologies for this are improving rapidly, and their strength is that consumers can be asked about their behavior directly and in their natural environments – for example, they can be asked what they ate in the last hour. This can be repeated at various and random time points over a certain period of time, ranging from a day to various weeks, to depict food behavior and consumption habits most realistically.

Implications

Elaborated personal systems of food-related attitudes and values have uncovered a crucial dilemma of consumers: Their personal values concerning food and eating differ significantly from their perceived food culture of today. Also, some eating situations and food products do not reflect, and are thus in conflict with, what is personally important to people. We explained this conflict by different values competing with each other at the same time, as well as habits, which set in without conscious awareness and sometimes can even be counter-intentional. A person who values healthy and organic foods but fails to buy them in a concrete situation is possibly a victim of her own habits (if the products are available for purchase). If, as shown, people hold the values of health and sustainable production processes dear but fail to realize them, a lifestyle change might be necessary.

Maio and colleagues (2007) pointed out factors in lifestyle change with the purpose of countering the obesity trend: "Of importance, changing the behaviors entails changing the context of the behavior *and* the individual's role in producing the behavior" (p. 100). Maio et al. emphasized that unhealthy eating is not necessarily the product of deliberate intentions and attitudes; instead, habit, automatic attitudes, and situational limitations compete with people's volitional control. As a consequence, lifestyle interventions aimed solely at increasing information on and motivation for the aspired healthier eating most probably have only limited effects. Interventions should provide tools to translate motivation into action; implementation intentions offer such a strategy for dealing with self-regulatory problems with regard to goal

attainment (e.g., Gollwitzer & Sheeran, 2006). Implementation intentions include an "if-then" plan for future action: Individuals formulate an action plan that defines where, when, and how they should behave to achieve their goal. For example, "if" a person has lunch at the company canteen, she specifies that "then" she will opt for the salad no matter what the other choices are. Implementation intentions have proved to be a successful way to promote behavior change; salient beliefs, assessing emotional outcomes of a behavior, and automatic attitudes should also be taken into account (Maio et al., 2007).

As touched upon above, interventions should most probably also include changes in the environment, so that undesired habits (unhealthy eating) are inhibited and desired habits (healthy and sustainable meals) can be strengthened. Food companies could move towards providing a more value-congruent food offer. As study 1 shows, people are highly skeptical about the business and production model of food markets today and suspect that they are based on short-term profit instead of sound environmental practices. To regain consumer confidence, food businesses need to demonstrate their good intentions. Rather than to provide more and more choices, which does not facilitate decision processes and does not render people happier (Schwartz, 2004), supermarkets and restaurants should focus on a pre-selected offer based on regional, natural, authentic, and sustainable products (Hauser, 2012).

In addition, supermarkets and food services could introduce a new moral climate around purchasing healthy, environmentally, and socially sound food products. Moral climate is described as a "shared belief that doing something is inherently "right" or "wrong", without regard to the benefits or

costs to self" (Maio et al., 2007, p. 122). Companies could encourage people to keep the salient food-related values in mind in the immediate context of purchase, and communication campaigns should animate consumers to generate their own values and implementation intentions.

Since food-related values have proven to predict consumption behavior, over and above the impact of attitudes, promotional strategies that reinforce a preference by invoking these values will be effective (Vinson, Scott, & Lamont, 1977). In addition, because food-related values might function like truisms, communication campaigns could back the values by providing cognitive support, which strengthens values and makes them more resistant to change (Maio & Olson, 1998). This would also simultaneously bolster the creation of a moral climate. Moreover, as the food-related value system proves to be highly interdependent and as related food categories are explained by the same core values, marketers could save costs and resources by concentrating several related food products (such as fair trade, organic, regional foods) into one communication campaign and focus on the same core values.

Observing and measuring value orientations and emerging value trends are crucial for strategic alignment of food products and their marketing. Generally, people's values are viewed as relatively stable during adulthood, but there can be changes as a result of adapting to new life situations or as a simple function of age (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009). With regard to domain-specific values, which are more specific than personal values but still more abstract than attitudes, changes are more likely to occur also during shorter time intervals (as a response to a changing environment or marketing

campaigns, for example). The changing importance of food-related values may result in the need for new products, adjustment of product ranges, and development and enhancement of goods and services (Lüdi & Hauser, 2010; Hauser, 2012).

Conclusion

> *(...) all attitudinal and behavioral decisions ultimately should be traceable to personal value priorities. ... personal value system stands as the superordinate structure. ... four possible paths from personal value systems to decisions are proposed. Each of these paths may be associated with a different decision, even though the underlying value systems are stable. Specification of which path is being investigated may enhance understanding and prediction of the value–attitude–behavior relation (Rohan, 2000, pp. 270/272).*

The overall goal of this dissertation project was to contribute to our understanding of consumers' food-related values and their interdependence, to appraise their significance in predicting the purchase of different foodstuffs, and to comprehend how much and in what way they influence actual behavior. Undeniably, every consumer and every food purchase situation is unique and influenced by a variety of other factors. But on the aggregated level, I believe

that food-related values are important constructs to grasp consumer attitudes and behavior. Although some questions remain open and future research will need to replicate findings to generalize them, with this dissertation project I can make a contribution to the ongoing research on the value–attitude–behavior chain. I hope insofar to have provided inspiration for theoretical advancements and further research in the values area in psychology as well as feasible and realizable encouragements for food companies and marketers.

References

Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: A review. *British Food Journal, 11*(10), 1140-1167. doi:10.1108/00070700910992961

Ajzen, J. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211. doi:10.1016/0749-5978(91)90020-T

Ajzen, I. (2005). *Attitudes, personality, and behavior* (2nd ed.). Milton-Keynes, England: Open University Press / McGraw-Hill.

Allport, G. W., Vernon, P. E., & Lindzey, G. (1960). *Study of values: Manual and test booklet.* Boston, MA: Houghton Mifflin.

Arvola, A., Vassallo, M., Dean, M., Lampila, P., Saba, A. Lähteenmäki, L., & Shepherd, R. (2008). Predicting intentions to purchase organic food: The role of affective and moral attitudes in the theory of planned behaviour. *Appetite, 50*(2-3), 443-454. doi:10.1016/j.appet.2007.09.010

Bardi, A., Lee, J. A., Hofmann-Towfigh, N., & Soutar, G. (2009). The structure of intraindividual value change. *Journal of Personality and Social Psychology, 97*(5), 913-929. doi:10.1037/a0016617

Brunsø, K., Scholderer, J., & Grunert, K. G. (2004). Closing the gap between values and behavior: A means-end theory of lifestyle. *Journal of Business Research, 57*(6), 665-670. doi:10.1016/S0148-2963(02)00310-7

Connors, M. M., Bisogni, C. A., Sobal, J., & Devine, C. (2001). Managing values in personal food systems. *Appetite, 36*(3), 189-200. doi:10.1006/appe.2001.0400

Davidov, E., Schmidt, P., & Schwartz, S. H. (2008). Bringing values back in: The adequacy of the European social survey to measure values in 20 countries. *Public Opinion Quarterly, 72*(3), 420-445. doi:10.1093/poq/nfn035

Feather, N. K. (1999). *Values, achievement, and justice: Studies in the psychology of deservingness*. New York, NY: Kluwer Academic/Plenum Publishers.

Fischler, C., & Masson, E. (2008). *Manger: Francais, Européens et Americains face a l'alimentation* [Eating: French, European and American opinions towards food]. Paris, France: Editions Odile Jacob.

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: a meta-analysis of effects and processes. *Advances in Experimental Social Psychology, 38,* 69-119. doi:10.1016/S0065-2601(06)38002-1

Guido, G., Prete, M. I., Peluso, A. M., Maloumby-Baka, R. C., & Buffa, C. (2010). The role of ethics and product personality in the intention to purchase organic food products: A structural equation modeling approach. *International Review of Economics, 57*(1), 79-102. doi:10.1007/s12232-009-0086-5

Hauser, M. (2012). *Consumer value monitor food*. GDI study no. 38. Rüschlikon, Switzerland: Gottlieb Duttweiler Institute.

Hofmann, W., Friese, M., & Strack, F. (2009). Impulse and self-control from a dual-systems perspective. *Perspectives on Psychological Science, 4*(2) 162-176. doi:10.1111/j.1745-6924.2009.01116.x

Hofmann, W., Friese, M., & Wiers, R. W. (2008). Impulsive versus reflective influences on health behavior: A theoretical framework and empirical review. *Health Psychology Review, 2*(2), 111-137. doi:10.1080/17437190802617668

Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology, 54*(4), 638-646. doi:10.1037/0022-3514.54.4.638

Honkanen, P., Verplanken, B., & Olsen, S. O. (2006). Ethical values and motives driving organic food choice. *Journal of Consumer Behaviour, 5*(5), 420-430. doi:10.1002/cb.190

Jastran, M. M., Bisogni, C. A., Sobal, J., Blake, C., & Devine, C. M. (2009). Eating routines: Embedded, value based, modifiable, and reflective. *Appetite, 52*(1), 127-136. doi:10.1016/j.appet.2008.09.003

Kruse, P., Dittler, A., & Schomburg, F. (2007). Nextexpertizer, nextcoach, nextmoderator: Kompetenzmessung aus der Sicht der Theorie kognitiver Selbstorganisation [Nextexpertizer, nextcoach, nextmoderator: Assessing competence according the theory of cognitive self-organisation]. In J. Erpenbeck & L. Rosenstiel (Eds.), *Handbuch Kompetenzmessung* (pp. 515-543). Stuttgart, Germany: Schäffer-Poeschel.

Kuntsche, E., & Labhart, F. (2012). ICAT: Development of an internet-based data collection method for ecological momentary assessment using personal cell phones. *European Journal of Psychological Assessment.* Advance online publication. doi:10.1027/1015-5759/a000152

Lüdi, N., & Hauser, M. (2010). *Consumer value monitor*. GDI study no. 35. Rüschlikon, Switzerland: Gottlieb Duttweiler Institute.

Magnusson, M. K., Arvola, A., Koivisto Hursti, U.-K., Åberg, L., & Sjödén, P.-O. (2003). Choice of organic foods is related to perceived consequences for human health and to environmentally friendly behaviour. *Appetite, 40*(2), 109-117. doi:10.1016/S0195-6663(03)00002-3

Maio, G. R., & Olson, J. M. (1995). Relations between values, attitudes, and behavioral intentions: The moderating role of attitude function. *Journal of Experimental Social Psychology, 31*, 266-285. doi:10.1006/jesp.1995.1013

Maio, G. R., & Olson, J. M. (1998). Values as truisms: Evidence and implications. *Journal of Personality and Social Psychology, 74*(2), 294-311. doi:10.1037/0022-3514.74.2.294

Maio, G. R., Olson, J. M., Bernard, M. M., & Luke, M. A. (2003). Ideologies, values, attitudes, and behavior. In J. Delamater (Ed.), *Handbook of social psychology* (pp. 283-308). New York, NY: Kluwer Academic/Plenum Publishers.

Maio, G. R., Verplanken, B., Manstead, A. S. R., Stroebe, W., Abraham, C., Sheeran, P., & Conner, M. (2007). Social psychological factors in

lifestyle change and their relevance to policy. *Social Issues and Policy Review, 1*(1), 99-137. doi:10.1111/j.1751-2409.2007.00005.x

Rohan, M. J. (2000). A rose by any name? The value construct. *Personality and Social Psychology Review, 4*(3), 255-277. doi:10.1207/S15327957PSPR0403_4

Rokeach, M. (1973). *The nature of human values.* New York, NY: Free Press.

Rozin, P. (2006). The integration of biological, social, cultural and psychological influences on food choice. In R. Shepherd & M. Maats (Eds.), *The psychology of food choice* (pp. 19-40). Oxfordshire, United Kingdom: CABI.

Saba, A. (2001). Cross-cultural differences in food choice. . In L. Frewer, E. Risvik, & H. Schifferstein (Eds.), *Food, people and society: A European perspective of consumers' food choices* (pp. 233-246). Berlin/Heidelberg, Germany: Springer.

Schwartz, B. (2004). *The paradox of choice: Why more is less.* New York, NY: HarperCollins Publishers.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology, Vol. 25* (pp. 1-65). New York, NY: Academic Press. doi:10.1016/S0065-2601(08)60281-6

Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., … Konty, M. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology*. doi:10.1037/a0029393

Strack, F., Werth, L., & Deutsch, R. (2006). Reflective and impulsive determinants of consumer behavior. *Journal of Consumer Psychology, 16*(3), 205-216. doi:10.1207/s15327663jcp1603_2

Tanner, C., & Wölfing Kast, S. (2003). Promoting sustainable consumption: Determinants of green purchases of Swiss consumers. *Psychology & Marketing, 20*(10), 883-902. doi:10.1002/mar.10101

Verplanken, B., & Aarts, H. (1999). Habit, attitude, and planned behaviour: Is habit an empty construct or an interesting case of goal-directed automaticity? *European Review of Social Psychology, 10*(1), 101-134. doi:10.1080/14792779943000035

Verplanken, B., & Holland, R. W. (2002). Motivated decision making: Effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology, 82*(3), 434-447. doi:10.1037/0022-3514.82.3.434

Verplanken, B., Aarts, H., van Knippenberg, A., & Moonen, A. (1998). Habit, information acquisition, and the process of making travel mode choices. *British Journal of Social Psychology, 37(1)*, 111-128. doi:10.1111/j.2044-8309.1998.tb01160.x

Vinson, D. E., Scott, J. E., & Lamont, L. M. (1977). The role of personal values in marketing and consumer behavior. *Journal of Marketing, 41*(2), 44-50.

Appendices

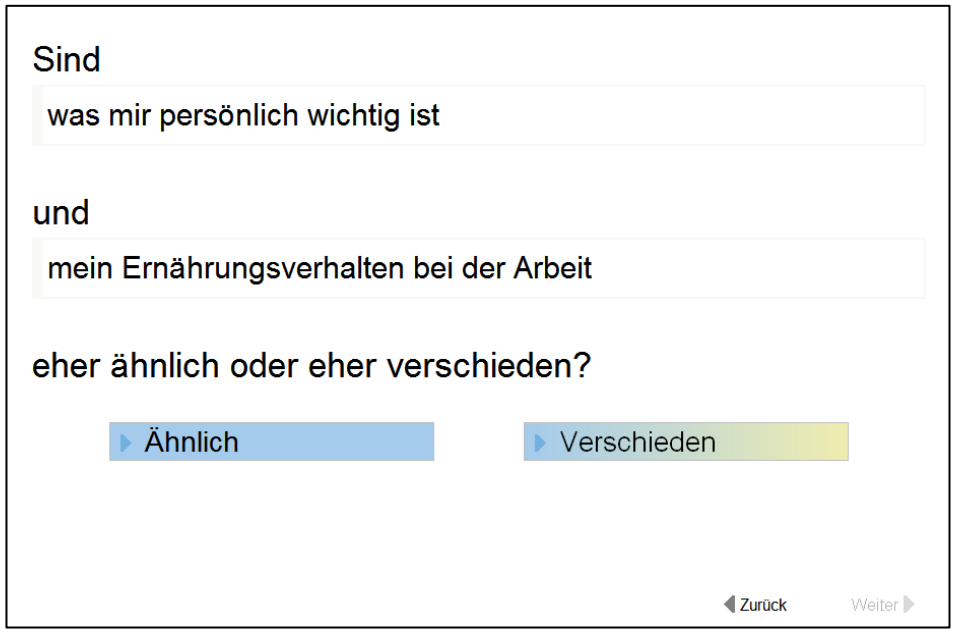
Appendices Table of Contents

Appendices to Chapter 2

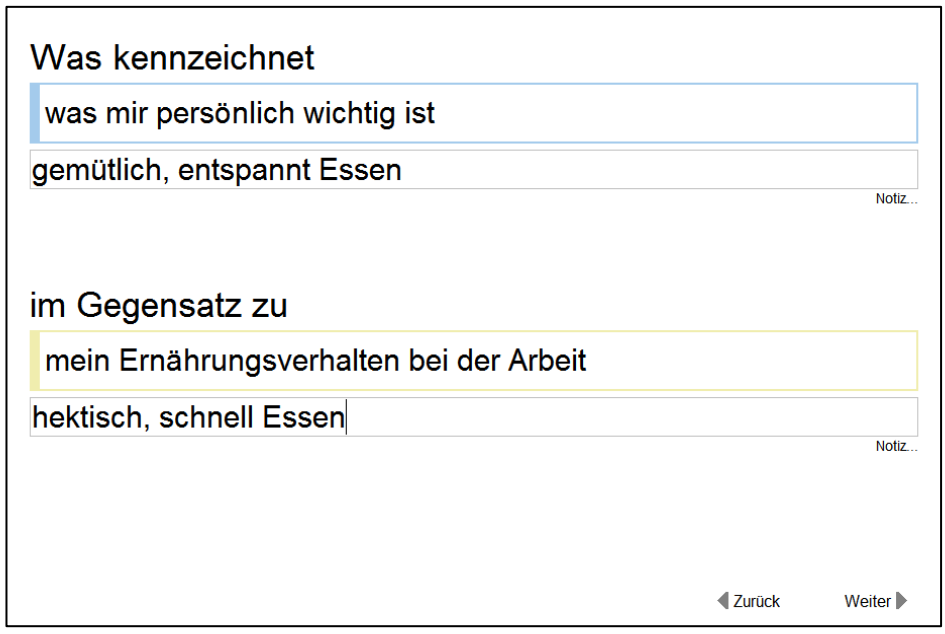
Appendix to Chapter 3

Appendices to Chapter 2

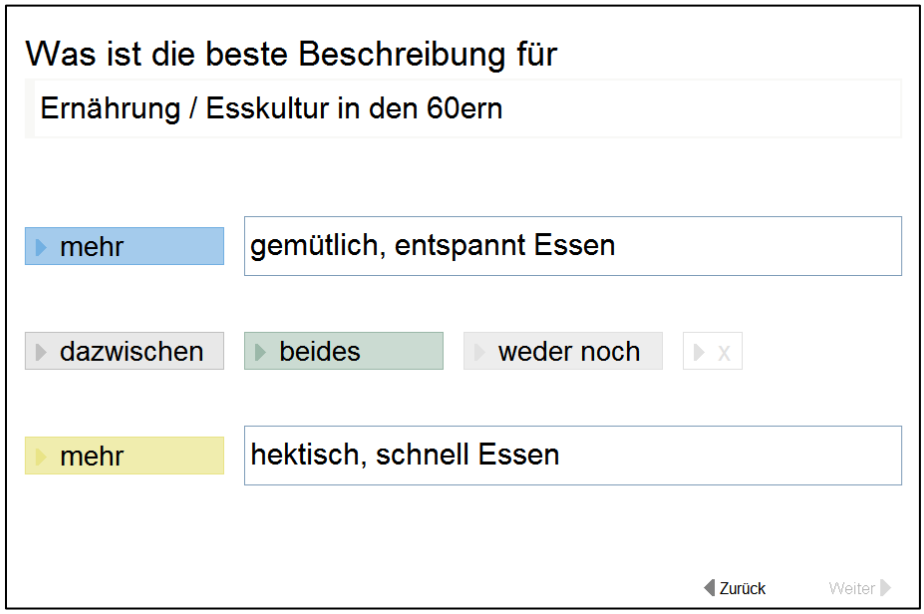
Appendix A-1: User interface nextexpertizer



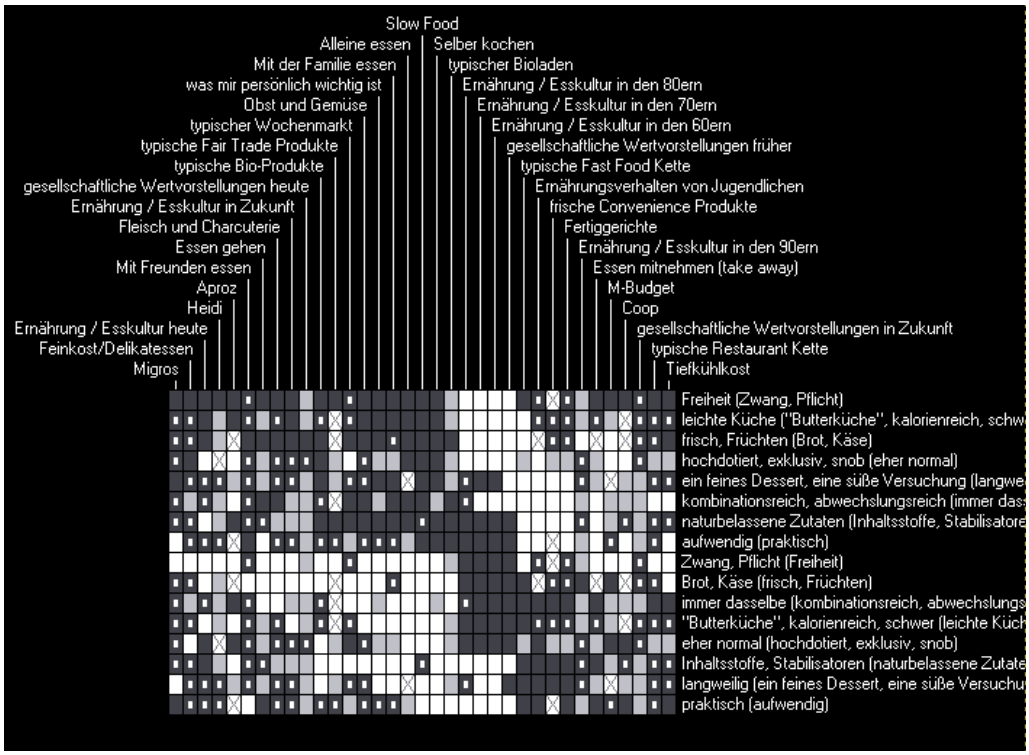
Note – Discrimination task for two example elements ('what is personally important to me' and 'eating at work').



Note – Eliciting personal constructs after discrimination task, the interviewer fills in the blanks but uses the description in the words of the participants.



Note – Assigning all the residual elements on one of the two personal construct poles just elicited.



Note – Example repertory grid matrix of one interview with all inquired elements (top row), elicited personal construct poles (right column), and the assignment of elements on construct poles.

Appendix A-2: List of inquired elements (study 1)

Entwicklung des Konsumfeldes

1. Ernährung / Esskultur in den 60ern
2. Ernährung / Esskultur in den 70ern
3. Ernährung / Esskultur in den 80ern
4. Ernährung / Esskultur in den 90ern
5. Ernährung / Esskultur heute
6. Ernährung / Esskultur in Zukunft

Konsumverhalten

7. mein Ernährungsverhalten bei der Arbeit
8. mein Ernährungsverhalten zu Hause
9. mein Ernährungsverhalten zu besonderen Anlässen
10. mein typisches Ernährungsverhalten
11. wie ich meine Kinder ernähre
12. Selber kochen
13. (Auswärts) Essen gehen
14. Essen bringen lassen (Lieferservice)
15. Essen mitnehmen (take away)
16. Alleine essen
17. Mit der Familie essen
18. Mit Freunden essen
19. Ernährungsverhalten von Jugendlichen
20. typisch Kaffee und Kuchen
21. typisches Festessen
22. typische Zwischenmahlzeit (Snack)
23. typische Diät

Ernährungstrends

24. typische Bio-Produkte
25. typische Fair Trade Produkte
26. typische Light-Produkte
27. Kochsendungen im Fernsehen
28. typische Fast Food Kette
29. typische Restaurant Kette
30. Slow Food
31. Functional Food
32. Ethno Food (Lebensmittel aus anderen Kulturkreisen)
33. Nahrungsmittel aus der Region

Konsumkategorien

34. Feinkost/Delikatessen
35. Tiefkühlkost
36. Fleisch und Charcuterie
37. Obst und Gemüse
38. Fisch
39. Milchprodukte
40. Fertiggerichte
41. Konserven
42. frische Convenience
43. Rohprodukte
44. Süsswaren

Bewertungsdimensionen

45. was mir persönlich wichtig ist
46. optimales Ernährungsverhalten
47. ideale Art zu geniessen
48. mein Lieblingsessen (Token)

49. gesunde Ernährung
50. gesellschaftliche Wertvorstellungen früher
51. gesellschaftliche Wertvorstellungen heute
52. gesellschaftliche Wertvorstellungen in Zukunft
53. Essen als Statussymbol

Phase 2: Elemente, die nur bewertet werden

Zugangswege (Supermarkt wird bei allen abgefragt und drei weitere durch Zufallsauswahl)

54. typischer Supermarkt
55. typischer Discounter
56. typischer Wochenmarkt
57. typischer Bioladen
58. typischer Lebensmittelfachhandel
59. Lebensmitteleinkauf im Internet

Migros Marken (Migros wird bei allen abgefragt und 7 durch Zufallsauswahl)

60. Migros
61. Séléction
62. M-Classic
63. M-Budget
64. Heidi
65. Aproz
66. Farmer
67. Actilife
68. Léger
69. Anna's Best
70. Frey
71. Lilibiggs
72. AdR (Aus der Region. Für die Region)

73. Bio – Engagement
74. Terrasuisse

Wettbewerb Marken (Coop wird bei allen abgefragt und 5 durch Zufallsauswahl)

75. Coop
76. Aldi
77. Fine Food
78. Qualité&Prix
79. Prix Garantie
80. Toni
81. LC1
82. Weight Watchers
83. Betty Bossi
84. Lindt
85. Naturaplan
86. Naturafarm

Appendix to Chapter 3

Appendix B-1: Questionnaire (study 2)[4]

A - Screening

S01 HH-Führung

Wer entscheidet bei Ihnen im Haushalt in der Regel über den Einkauf von Lebensmitteln, Getränken und täglichen Verbrauchsartikeln?

1	Sie alleine
2	Sie mit jemand anderem zusammen
3	Jemand anderer (lead to an exemption of the respondent)
9	Weiss nicht / keine Angabe (lead to an exemption of the respondent)

S02 Bedarfsschätzung

Bitte geben Sie an, wie viel Prozent Ihrer Gesamtausgaben für Lebensmittel und Produkte des täglichen Bedarfs Sie im jeweiligen Geschäft ausgeben (Summe der Prozentanteile muss 100 ergeben).

Migros _____%

Coop _____%

Discounter (Aldi/Lidl/Denner) _____%

Anderes Geschäft _____%

[4] This is only a MS Word version; the online version was formatted differently. This questionnaire is also available in French.

B – Hauptfragebogen

In der folgenden Befragung möchten wir untersuchen, welche Faktoren beim Ernährungsverhalten und beim Einkauf von Lebensmitteln für die Schweizer Bevölkerung eine Rolle spielen.

F01.a Einstellung zu Produktgruppen

In den zwei folgenden Fragen möchten wir Sie zu Ihrer **generellen Einstellung** zu verschiedenen Produktgruppen befragen.

Bitte beurteilen Sie **spontan und unabhängig von Ihrem Haupteinkaufsort** folgende Produktgruppen auf einer Skala von 1 bis 7, wobei **1 „mag ich nicht“** und **7 „mag ich“** bedeutet. Mit den Zahlen dazwischen können Sie Ihr Urteil abstufen.

Wählen Sie die Antwort, der Sie am ehesten zustimmen, indem Sie das entsprechende Feld ankreuzen.

		mag ich nicht			mittel-mässig			mag ich		kann ich nicht beurteilen
		1	2	3	4	5	6	7		k.A.
1	Früchte & Gemüse	□	□	□	□	□	□	□		□
2	Tiefpreis-Produkte (z.B. M-Budget, Prix Garantie)	□	□	□	□	□	□	□		□
3	Fair Trade Produkte (z.B. Kaffee von Max Havelaar)	□	□	□	□	□	□	□		□
4	Light-Produkte	□	□	□	□	□	□	□		□
5	Functional Food Produkte (z.B. probiotische Joghurts, cholesterin-senkende Margarine, Vitaminzusätze)	□	□	□	□	□	□	□		□
6	Feinkost/Delikatessen	□	□	□	□	□	□	□		□
7	Frisch-Convenience Produkte aus dem Kühlschrank (z.B. abgepacktes Sandwich, Nudelgericht, essfertiger Salat)	□	□	□	□	□	□	□		□
8	Lang haltbare Fertiggerichte (z.B. Rösti aus der Dose, Tiefkühlpizza, Suppe zum Anrühren)	□	□	□	□	□	□	□		□
9	Bio-Produkte	□	□	□	□	□	□	□		□

F01.b Einstellung zu Produktgruppen

Bitte beurteilen Sie dieselben Produktkategorien **wieder spontan und unabhängig von Ihrem Haupteinkaufsort** auf einer Skala von 1 bis 7, wobei **1 „finde ich schlecht“** und **7 „finde ich gut“** bedeutet. Mit den Zahlen dazwischen können Sie Ihr Urteil abstufen.

Wählen Sie die Antwort, der Sie am ehesten zustimmen, indem Sie das entsprechende Feld ankreuzen.

		mag ich nicht			mittel-mässig			mag ich		kann ich nicht beurteilen
		1	2	3	4	5	6	7		k.A.
1	Früchte & Gemüse	□	□	□	□	□	□	□		□
2	Tiefpreis-Produkte (z.B. M-Budget, Prix Garantie)	□	□	□	□	□	□	□		□
3	Fair Trade Produkte (z.B. Kaffee von Max Havelaar)	□	□	□	□	□	□	□		□
4	Light-Produkte	□	□	□	□	□	□	□		□
5	Functional Food Produkte (z.B. probiotische Joghurts, cholesterin-senkende Margarine, Vitaminzusätze)	□	□	□	□	□	□	□		□
6	Feinkost/Delikatessen	□	□	□	□	□	□	□		□
7	Frisch-Convenience Produkte aus dem Kühlschrank (z.B. abgepacktes Sandwich, Nudelgericht, essfertiger Salat)	□	□	□	□	□	□	□		□
8	Lang haltbare Fertiggerichte (z.B. Rösti aus der Dose, Tiefkühlpizza, Suppe zum Anrühren)	□	□	□	□	□	□	□		□
9	Bio-Produkte	□	□	□	□	□	□	□		□

F02 Wertestruktur der Konsumenten

Bitte beurteilen Sie, wie wichtig Ihnen persönlich folgende Dinge beim Einkaufen von Nahrungsmittel und beim Essen sind:

Wie wichtig ist Ihnen persönlich...

		gar nicht wichtig			mittel-mässig			sehr wichtig		kann ich nicht beurteilen
		1	2	3	4	5	6	7		k.A.
1	... beim Einkauf der Lebensmittel auf umwelt- und tierfreundliche Produktion und Verarbeitung zu achten	□	□	□	□	□	□	□		□
2	... saisonale Produkte einzukaufen und dafür auch auf Auswahl zu verzichten	□	□	□	□	□	□	□		□
3	... kreativ zu kochen und auch mal was Neues auszuprobieren	□	□	□	□	□	□	□		□
4	... sich Zeit zu nehmen zum selber Zubereiten und selber Kochen	□	□	□	□	□	□	□		□
5	... ein natürlich, ursprünglicher Geschmack	□	□	□	□	□	□	□		□
6	... sich Zeit zu nehmen um in Gesellschaft (mit Familie, Freunden) zu essen	□	□	□	□	□	□	□		□
7	... zu wissen, wie die Produkte hergestellt wurden und woher sie kommen	□	□	□	□	□	□	□		□
8	... in Ruhe zu essen und zu geniessen und bei einem liebevoll zubereiteten Essen zu entspannen	□	□	□	□	□	□	□		□
9	... Produkte aus der Region	□	□	□	□	□	□	□		□
10	... leichtes und bekömmliches Essen	□	□	□	□	□	□	□		□

Wie wichtig ist Ihnen persönlich...

		gar nicht wichtig			mittel-mässig			sehr wichtig		kann ich nicht beurteilen
11	... eine verlässliche Qualität durch kontrollierte und zertifizierte Produkte zu kaufen	□	□	□	□	□	□	□		□
12	... ein attraktives und abwechslungsreiches Angebot	□	□	□	□	□	□	□		□
13	... sich beim Essen auch mal eine kleine Freude zu machen und sich damit zu belohnen	□	□	□	□	□	□	□		□
14	... einfache und gewohnte Grundnahrungsmittel für die täglichen Mahlzeiten zu verwenden	□	□	□	□	□	□	□		□
15	... dass die Lebensmittel frisch und unbehandelt sind	□	□	□	□	□	□	□		□
16	... sich mal keine Gedanken zu machen und das zu essen, was schmeckt	□	□	□	□	□	□	□		□
17	... auch mal was Deftiges zu essen	□	□	□	□	□	□	□		□
18	... Fertiggerichte zu essen, weil sie einfach und bequem jederzeit zur Verfügung stehen	□	□	□	□	□	□	□		□
19	... bei der Ernährung auf Ausgewogenheit zu achten und gesundheitsbewusst zu handeln	□	□	□	□	□	□	□		□

F04 Preissensibilität

Die nächsten Fragen beziehen sich auf **Ihr generelles Einkaufverhalten bei Nahrungsmitteln.**

Bitte geben Sie an, inwiefern Sie den folgenden Aussagen zustimmen:

		trifft gar nicht zu			mittel-mässig			trifft sehr zu		kann ich nicht beurteilen
		1	2	3	4	5	6	7		k.A.
1	Über die Produktpreise der unterschiedlichen Lebensmittelanbieter bin ich gut informiert.	□	□	□	□	□	□	□		□
2	Ich weiss genau, welche Nahrungsmittel in welchem Geschäft am billigsten sind.	□	□	□	□	□	□	□		□
3	Einzelne Preise im Bereich Lebensmittel interessieren mich nicht.	□	□	□	□	□	□	□		□
4	Ich achte darauf meinen Lebensmittel-Einkauf beim billigsten Anbieter zu machen.	□	□	□	□	□	□	□		□
5	Ich achte beim Lebensmittel-Einkauf auf Qualität und nicht auf den Preis.	□	□	□	□	□	□	□		□

F05.1a Soziodemographie – Kinder

Haben Sie Kinder und wenn ja, wie viele und wie alt sind sie?

(unabhängig davon, ob die Kinder noch im selben Haushalt leben oder nicht)

1	Anzahl Kinder unter 6 Jahre __
2	Anzahl Kinder 6 – 12 Jahre __
3	Anzahl Kinder 13 – 18 Jahre __
4	Anzahl Kinder über 18 Jahre __
9	Ich habe keine Kinder __

F05.2 Soziodemographie - Nahrungsmittel

Kommen für Sie gewisse Nahrungsmittel aus einem oder mehreren der folgenden Gründe NICHT in Betracht?

1	Ich bin Vegetarier
2	Ich leide an einer (Lebensmittel-)Allergie
3	Ich bin Diabetiker
4	Ich mache (gerade) eine Diät und darf daher bestimmte Lebensmittel nicht essen
5	Meine Religion verbietet mir den Genuss bestimmter Lebensmittel
9	Keines von diesen

F05.3a Kochverhalten

Wie gut können Sie kochen?

gar nicht gut			mittel-mässig			sehr gut		kann ich nicht beurteilen
☐	☐	☐	☐	☐	☐	☐		☐

F05.3b Kochverhalten

Bitte beantworten Sie diese beiden letzten Fragen.

		nie	1	2	3	4	5	6	jeden Tag
1	An wie vielen Tagen in der Woche essen Sie zuhause in Gesellschaft mit anderen?	☐	☐	☐	☐	☐	☐	☐	☐
2	An wie vielen Tagen in der Woche kochen Sie selber zuhause?	☐	☐	☐	☐	☐	☐	☐	☐

Curriculum Vitae

PERSONALIEN

Name	Mirjam Hauser
Adresse	Dorfstrasse 66
	8037 Zürich
Telefon	079 409 45 78
E-Mail	mirjamhauser@gmx.ch
Geburtsdatum	27. Juni 1980, Baden
Abschluss	lic. phil. / M. Sc.

BERUFLICHE TÄTIGKEITEN

seit 01/2008	GDI Gottlieb Duttweiler Institute, Rüschlikon/Zürich. Senior Researcher
05/2007 – 08/2007	Schweizerische Botschaft, Buenos Aires, Argentinien. Praktikum diplomatischer Dienst
12/2006 – 04/2007	GDI Gottlieb Duttweiler Institute, Rüschlikon/Zürich. Praktikum Research
11/2005 – 04/2006	BBDO Consulting, Zürich. Diplomandenvertrag und Projektmitarbeit
07/2005 – 10/2005	BBDO Consulting, Düsseldorf. Praktikum Marktforschung und Marketing
09/2003 – 10/2003	Westcoast Cylinders Inc., Vancouver, Canada. Assistenz
11/2001 – 09/2003	Ecofin Research & Consulting, Zürich. Systembetreuerin und Kundenberaterin (Teilzeit)
12/2000 – 04/2000	Swiss Snowboard School Verbier. Snowboard-Lehrerin
08/2000 – 11/2000	Credit Suisse Group, Zürich. Projektmitarbeit

AUSBILDUNG

seit 2010	Externe Doktorandin Universität Zürich, Sozial- und Wirtschaftspsychologie (Prof. Dr. Klaus Jonas)
2004 – 2005	Universidad de Granada, Spanien. Freier Austausch
2001 – 2006	Lizentiat / Master of Science der Universität Zürich • Hauptfach Psychologie, Schwerpunkt: Sozial- und Wirtschaftspsychologie; Lizentiatsarbeit zum Thema Konsumentenbasierter Markenwert • 1. Nebenfach Politikwissenschaft • 2. Nebenfach Kommunikationswissenschaft
1996 – 2000	Kantonsschule Wettingen, Aargau, Maturität Typus D
1992 – 1996	Bezirksschule Baden
1987 – 1992	Primarschule Ennetbaden

WEITERBILDUNGEN

08/2012	Summer School on Advanced Methods in the Social Sciences, Lugano. „Case Studies: Design, Methods, and Reporting“ und „Qualitative Interviewing“
08/2011	Summer School on Advanced Methods in the Social Sciences, Lugano. „Structural Equation Modeling with Amos“
07/2011	Essex Summer School in Social Science Data Analysis and Collection, University of Essex, UK. „Qualitative Research Methods“
2010 – 2012	Verschiedene Weiterbildungskurse an der Universität Zürich • Wissenschaftliches Arbeiten (Statistik, Scientific Writing, Scientific Presentation Skills) • Computer Anwendungen • Überfachliche Kompetenzen (Moderations- und Verhandlungstechniken, Konfliktbewältigung, etc.)

SPRACHEN

Deutsch	Muttersprache
Englisch	Gute Kenntnisse schriftlich und mündlich (Cambridge Certificate in Advanced English, 2000)
Spanisch	Gute Kenntnisse schriftlich und mündlich
Französisch	Kenntnisse schriftlich und mündlich
Italienisch	Kenntnisse schriftlich und mündlich

IT-KENTNISSE

MS Office	Sehr gute Anwenderkenntnisse
Statistik	Sehr gute Kenntnisse SPSS und AMOS

KONFERENZBEITRÄGE

2012	Hauser, M. (2012, September). Bio, billig oder bequem? Welche essspezifischen Werte relevant sind und wie sie Konsumverhalten beeinflussen. 48. Kongress der Deutschen Gesellschaft für Psychologie, Bielefeld.
2011	Hauser, M. (2011, September). Billig, bequem oder bio? Der Einfluss essspezifischer Werte aufs Einkaufsverhalten und die Mediatorrolle von Einstellungen. 13. Tagung der Fachgruppe Sozialpsychologie, Deutsche Gesellschaft für Psychologie, Hamburg.